

Meteorological characterisation of the FEBUKO hill cap cloud experiments,

Part I: Synoptic characterisation of measurement periods

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ELECTRONIC SUPPLEMENTARY MATERIAL (ESM)

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A: The cloud event 02-10-2001

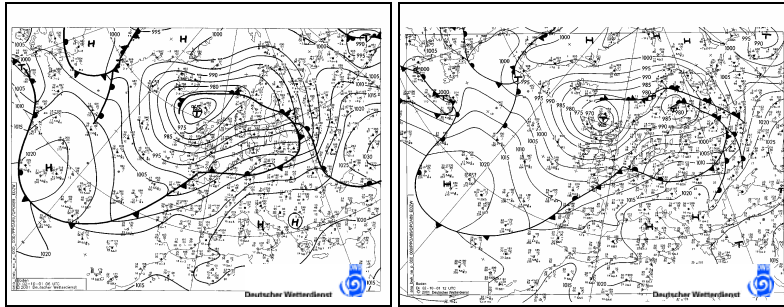


Fig. A1: Surface weather charts on 02 October 2001, 00 and 12 UTC (source: DWD).

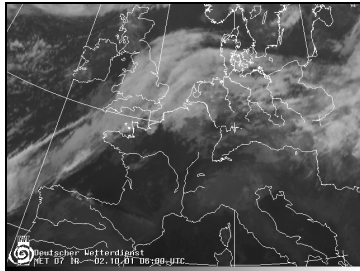


Fig. A2: IR-satellite picture on 02 October 2001, 06 UTC (source: DWD).

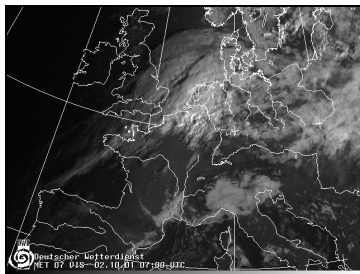


Fig. A3: VIS-satellite picture on 02 October 2001, 07 UTC (source: DWD).

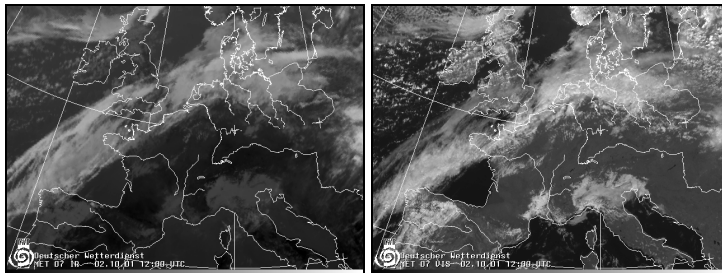


Fig. A4: IR and VIS-satellite pictures on 02 October 2001, 12 UTC (source: DWD).

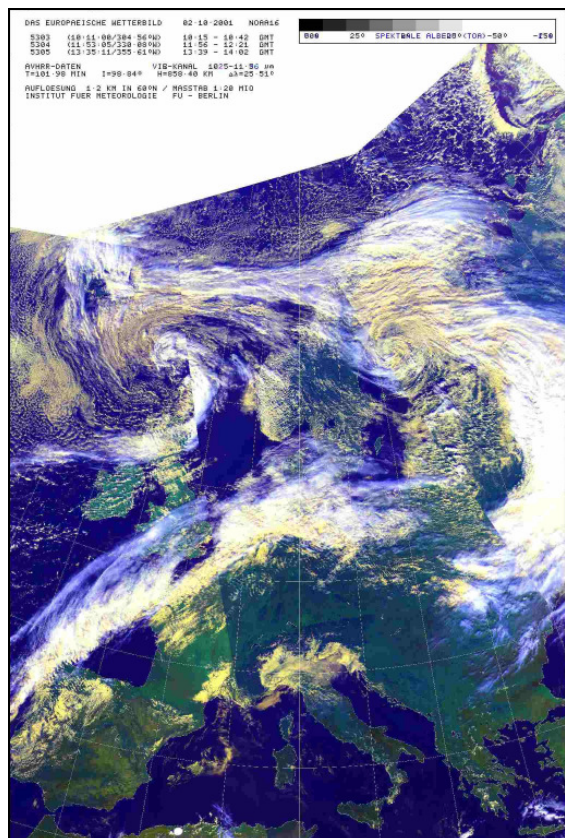


Fig. A5: NOAA satellite pictures on 02 October 2001 (source: Berliner Wetterkarte, 2001).

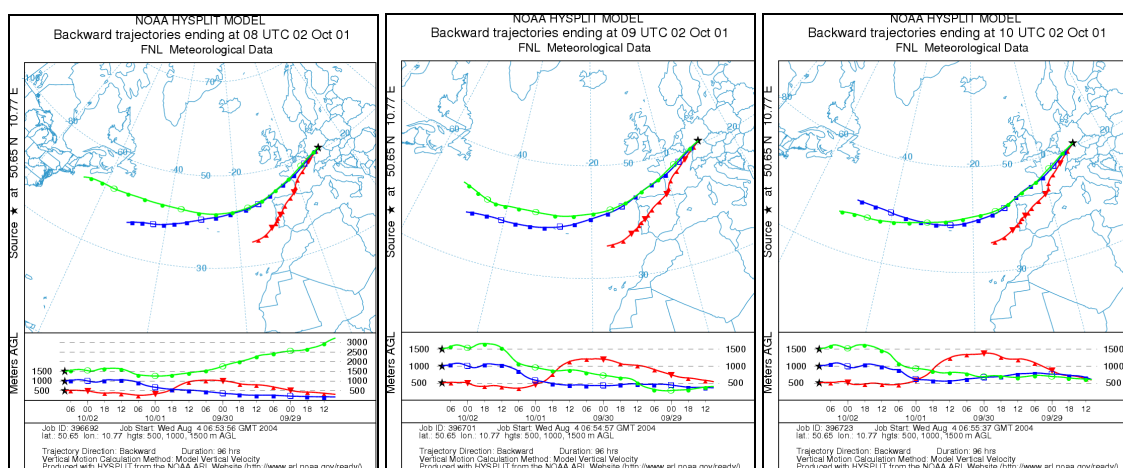


Fig. A6: Backward trajectories on 02 October 2001, 08, 09, and 10 UTC (source: NOAA ARL Website).

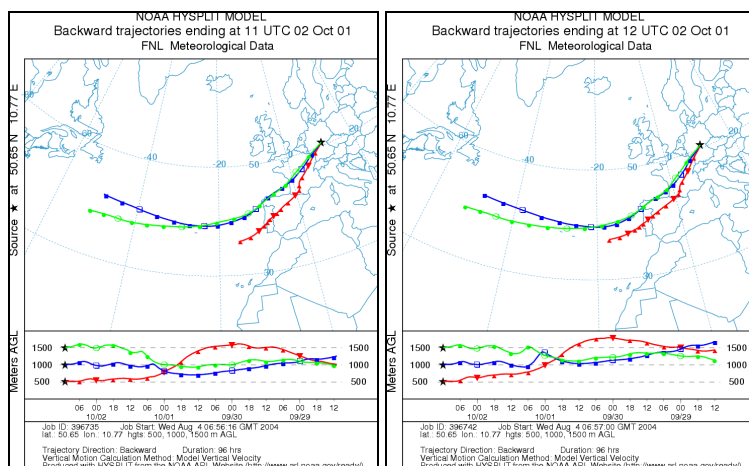


Fig. A7: Backward trajectories on 02 October 2001, 11 and 12 UTC (source: NOAA ARL Website).

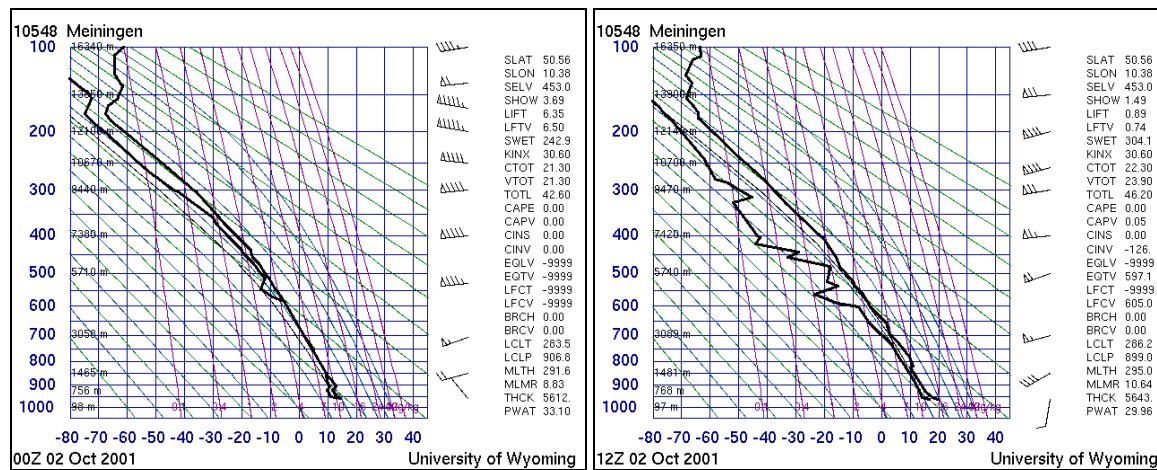


Fig. A8: Vertical rawinsonde profiles of temperature and dew-point temperature on 02 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table A1: Locally measured meteorological data at the summit station Schmücke on 02 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	10.0	100.0	0.7	250.0	6.7	904.2
0:10	10.1	100.0	0.2	250.0	6.8	904.5
0:20	10.1	100.0	0.1	240.0	6.8	904.5
0:30	10.1	100.0	0.1	240.0	6.3	904.3
0:40	10.1	100.0	0.0	240.0	6.6	904.5
0:50	10.0	100.0	0.0	250.0	5.8	904.5
1:00	10.0	100.0	0.1	240.0	4.9	904.7
1:10	10.0	100.0	0.6	240.0	4.7	904.8
1:20	10.1	100.0	0.5	240.0	4.7	905.0
1:30	10.0	100.0	0.9	230.0	5.2	904.9
1:40	10.0	100.0	0.4	240.0	5.4	904.7
1:50	9.9	100.0	0.1	240.0	5.9	904.6
2:00	9.8	100.0	0.1	240.0	5.7	904.7
2:10	9.8	100.0	0.1	250.0	5.4	904.7
2:20	9.7	100.0	0.0	240.0	5.0	904.7
2:30	9.6	100.0	0.0	230.0	5.1	904.8
2:40	9.6	100.0	0.0	230.0	5.7	904.7
2:50	9.5	100.0	0.0	230.0	5.6	904.7
3:00	9.6	100.0	0.0	220.0	6.0	904.7
3:10	9.7	100.0	0.0	220.0	6.1	904.7
3:20	9.8	100.0	0.0	230.0	6.2	904.7
3:30	10.1	100.0	0.0	230.0	5.9	904.7
3:40	10.4	100.0	0.0	230.0	5.3	904.8
3:50	10.7	100.0	0.0	220.0	7.4	904.7
4:00	11.0	100.0	0.0	220.0	7.6	904.7
4:10	11.3	100.0	0.0	220.0	8.1	904.7
4:20	11.4	100.0	0.1	220.0	8.0	904.6
4:30	11.6	100.0	0.0	220.0	8.6	904.5
4:40	11.7	100.0	0.0	220.0	8.9	904.6
4:50	11.8	100.0	0.0	220.0	9.9	904.6
5:00	11.8	100.0	0.0	220.0	10.1	904.6
5:10	11.7	100.0	0.1	210.0	10.6	904.5
5:20	11.7	100.0	0.0	220.0	10.1	904.6
5:30	11.7	100.0	0.0	220.0	8.8	904.5
5:40	11.6	100.0	0.0	210.0	10.3	904.5
5:50	11.6	100.0	0.0	220.0	9.3	904.5
6:00	11.7	100.0	0.0	220.0	9.6	904.6
6:10	11.8	100.0	0.0	220.0	8.9	904.7
6:20	11.8	100.0	0.0	220.0	8.7	904.7
6:30	11.8	100.0	0.1	220.0	8.9	904.6
6:40	11.8	100.0	0.0	220.0	9.5	904.6
6:50	11.9	100.0	0.0	220.0	8.7	904.8
7:00	11.9	100.0	0.0	220.0	9.5	905.0
7:10	12.1	100.0	0.0	220.0	10.7	905.1
7:20	12.2	100.0	0.0	220.0	10.2	905.1
7:30	12.3	100.0	0.0	220.0	9.7	905.1
7:40	12.3	100.0	0.0	220.0	9.2	905.0
7:50	12.4	100.0	0.0	210.0	10.9	905.1
8:00	12.4	100.0	0.0	210.0	11.3	904.9
8:10	12.5	100.0	0.0	210.0	12.1	904.9
8:20	12.7	100.0	0.0	210.0	12.4	905.1
8:30	12.8	100.0	0.0	210.0	12.7	905.2
8:40	12.9	100.0	0.0	210.0	12.8	905.1
8:50	12.9	100.0	0.0	210.0	11.8	905.3
9:00	13.0	100.0	0.0	220.0	9.4	905.2
9:10	13.1	100.0	0.0	220.0	9.6	905.2
9:20	13.2	100.0	0.0	220.0	9.6	905.1
9:30	13.3	100.0	0.0	220.0	10.5	905.0
9:40	13.3	100.0	0.0	220.0	10.5	905.0
9:50	13.4	100.0	0.0	220.0	10.9	905.0
10:00	13.5	100.0	0.0	210.0	10.1	905.0
10:10	13.5	100.0	0.0	210.0	11.1	905.0
10:20	13.5	100.0	0.0	210.0	12.2	904.8
10:30	13.6	100.0	0.0	210.0	11.3	904.7
10:40	13.6	100.0	0.0	210.0	12.2	904.7
10:50	13.8	100.0	0.0	210.0	12.1	904.4
11:00	14.0	100.0	0.0	210.0	11.4	904.7
11:10	14.1	100.0	0.0	210.0	13.1	904.3
11:20	14.2	100.0	0.0	210.0	13.5	904.2
11:30	14.2	100.0	0.0	210.0	13.0	904.2
11:40	14.2	100.0	0.0	210.0	13.3	904.0
11:50	14.5	100.0	0.0	210.0	13.2	903.8
12:00	14.7	100.0	0.0	210.0	13.4	903.8
12:10	14.8	100.0	0.0	210.0	12.9	903.9
12:20	15.1	100.0	0.0	210.0	10.8	903.7
12:30	15.1	100.0	0.0	210.0	11.5	903.3
12:40	15.4	100.0	0.0	210.0	13.1	903.2
12:50	15.6	100.0	0.0	210.0	12.4	903.1
13:00	15.9	100.0	0.0	210.0	12.5	903.1
13:10	16.2	100.0	0.0	210.0	12.7	903.2
13:20	16.1	100.0	0.0	210.0	14.1	903.1

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
13:30	16.1	100.0	0.0	210.0	13.2	903.0
13:40	16.1	100.0	0.0	210.0	12.7	903.0
13:50	16.7	100.0	0.0	210.0	13.3	902.8
14:00	17.2	100.0	0.0	210.0	12.7	902.9
14:10	16.9	100.0	0.0	220.0	13.9	902.9
14:20	16.8	100.0	0.0	210.0	15.5	902.9
14:30	16.8	100.0	0.0	210.0	15.2	902.7
14:40	16.7	97.0	0.0	210.0	14.3	903.0
14:50	16.8	90.0	0.0	210.0	13.9	903.0
15:00	16.9	89.0	0.0	210.0	13.1	903.0
15:10	17.0	86.0	0.0	210.0	13.7	902.8
15:20	17.0	86.0	0.0	210.0	13.0	902.9
15:30	17.2	84.0	0.0	210.0	12.8	902.9
15:40	17.1	85.0	0.0	210.0	12.7	902.9
15:50	16.9	85.0	0.0	210.0	12.1	902.8
16:00	16.9	85.0	0.0	210.0	12.1	902.8
16:10	16.9	85.0	0.0	210.0	11.6	902.9
16:20	16.8	84.0	0.0	210.0	11.5	902.8
16:30	16.8	84.0	0.0	210.0	11.9	902.7
16:40	16.7	84.0	0.0	210.0	12.2	902.8
16:50	16.6	84.0	0.0	220.0	11.3	902.9
17:00	16.4	85.0	0.0	220.0	11.1	902.8
17:10	16.2	88.0	0.0	220.0	9.1	902.9
17:20	16.2	87.0	0.0	220.0	10.8	902.9
17:30	16.2	86.0	0.0	220.0	10.7	903.0
17:40	16.0	87.0	0.0	220.0	10.5	903.0
17:50	15.9	87.0	0.0	220.0	10.7	903.1
18:00	15.8	88.0	0.0	220.0	10.8	903.2
18:10	15.8	88.0	0.0	220.0	10.7	903.3
18:20	15.8	87.0	0.0	220.0	10.1	903.4
18:30	15.8	88.0	0.0	220.0	10.7	903.5
18:40	15.8	88.0	0.0	220.0	11.4	903.6
18:50	15.8	88.0	0.0	220.0	10.6	903.6
19:00	15.8	88.0	0.0	220.0	10.7	903.8
19:10	15.8	88.0	0.0	220.0	10.8	903.8
19:20	15.7	88.0	0.0	220.0	11.1	904.0
19:30	15.6	89.0	0.0	220.0	11.5	904.0
19:40	15.6	89.0	0.0	220.0	11.0	904.0
19:50	15.6	89.0	0.0	220.0	10.6	904.2
20:00	15.4	89.0	0.0	220.0	10.2	904.2
20:10	15.3	91.0	0.0	220.0	9.4	904.2
20:20	15.2	91.0	0.0	220.0	10.5	904.2
20:30	15.2	91.0	0.0	220.0	9.9	904.3
20:40	15.3	91.0	0.0	220.0	10.8	904.3
20:50	15.5	91.0	0.0	220.0	10.7	904.3
21:00	15.5	91.0	0.0	220.0	10.1	904.3
21:10	15.4	91.0	0.0	220.0	10.7	904.3
21:20	15.3	92.0	0.0	220.0	9.8	904.2
21:30	15.2	93.0	0.0	220.0	10.1	904.3
21:40	15.1	93.0	0.0	220.0	10.6	904.3
21:50	15.0	94.0	0.0	220.0	10.0	904.3
22:00	14.9	94.0	0.0	220.0	10.3	904.4
22:10	14.7	94.0	0.0	220.0	9.2	904.4
22:20	14.5	96.0	0.0	220.0	9.4	904.5
22:30	14.4	97.0	0.0	220.0	8.8	904.5
22:40	14.4	97.0	0.0	220.0	8.2	904.6
22:50	14.3	97.0	0.0	230.0	8.3	904.7
23:00	14.2	97.0	0.0	230.0	8.3	904.7
23:10	14.3	98.0	0.0	220.0	9.6	904.7
23:20	14.3	98.0	0.0	220.0	9.7	904.7
23:30	14.1	98.0	0.0	230.0	7.7	904.6
23:40	14.0	99.0	0.0	230.0	7.5	904.6
23:50	13.9	99.0	0.0	230.0	6.9	904.6

B: The cloud event (06-08)-10-2001

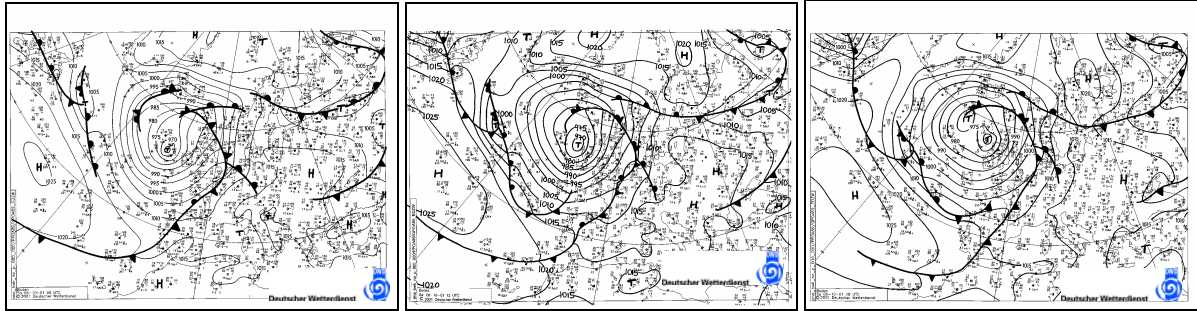


Fig. B1: Surface weather charts on 06 October 2001, 06, 12, and 18 UTC (source: DWD).

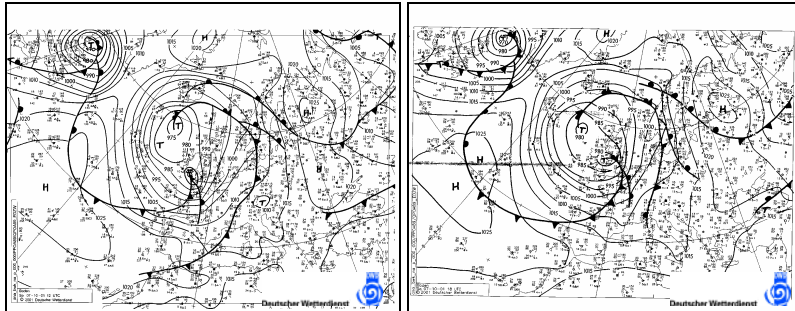


Fig. B2: Surface weather charts on 07 October 2001, 12, and 18 UTC (source: DWD).

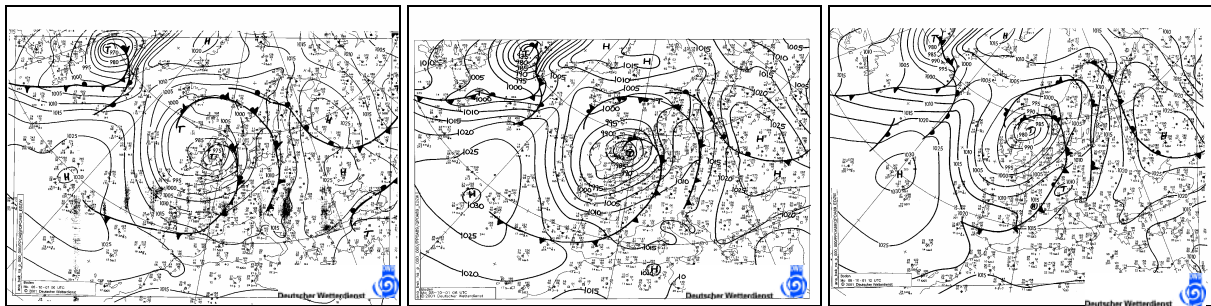


Fig. B3: Surface weather charts on 08 October 2001, 00, 06, and 12 UTC (source: DWD).

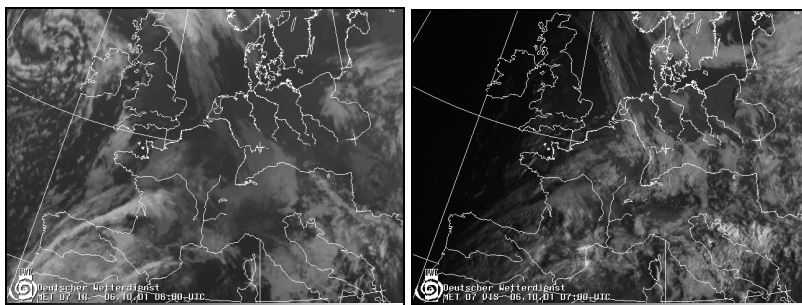


Fig. B4: IR and VIS-satellite pictures on 06 October 2001, 06 and 07 UTC (source: DWD).

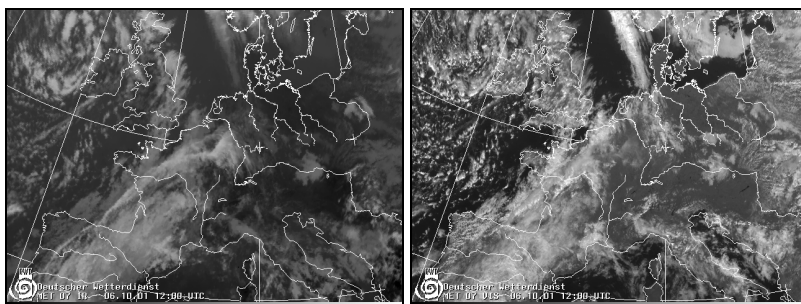


Fig. B5: IR-and VIS-satellite pictures on 06 October 2001, 12 UTC (source: DWD).

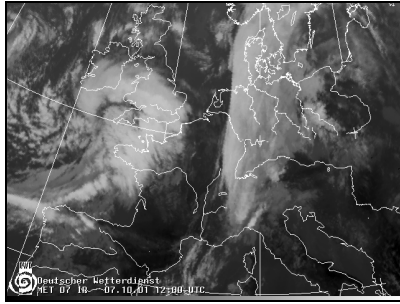


Fig. B6: IR-satellite picture on 07 October 2001, 12 UTC (source: DWD).

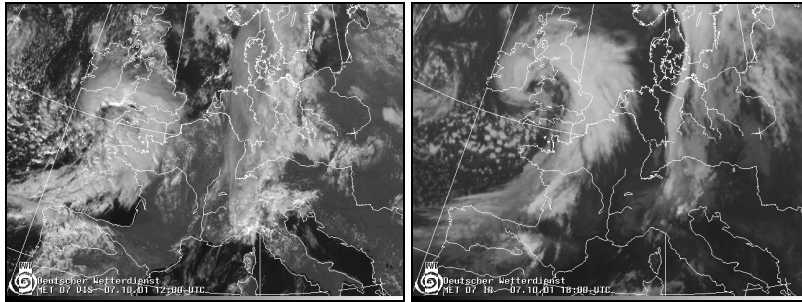


Fig. B7: VIS-satellite pictures on 07 October 2001, 12 and 18 UTC (source: DWD).

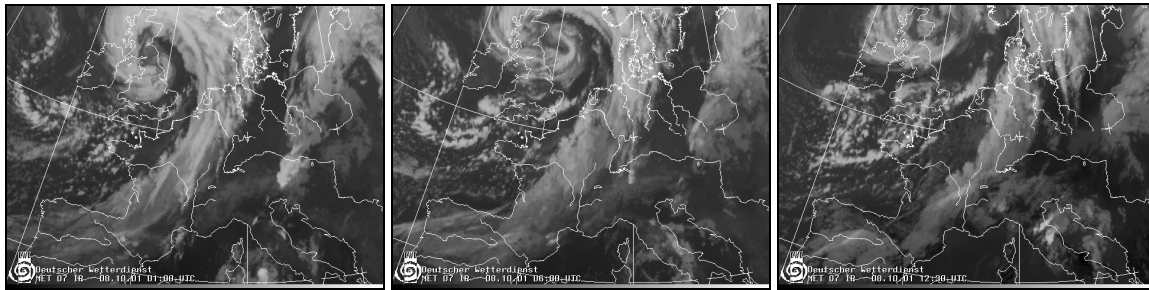


Fig. B8: IR-satellite pictures on 08 October 2001, 01, 06, and 12:30 UTC (source: DWD).

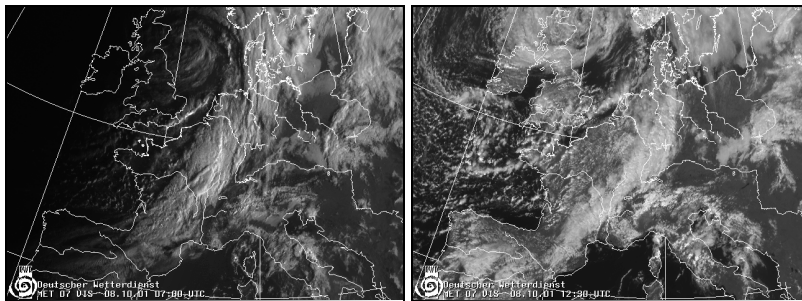


Fig. B9: VIS-satellite pictures on 08 October 2001, 07 and 12:30 UTC (source: DWD).

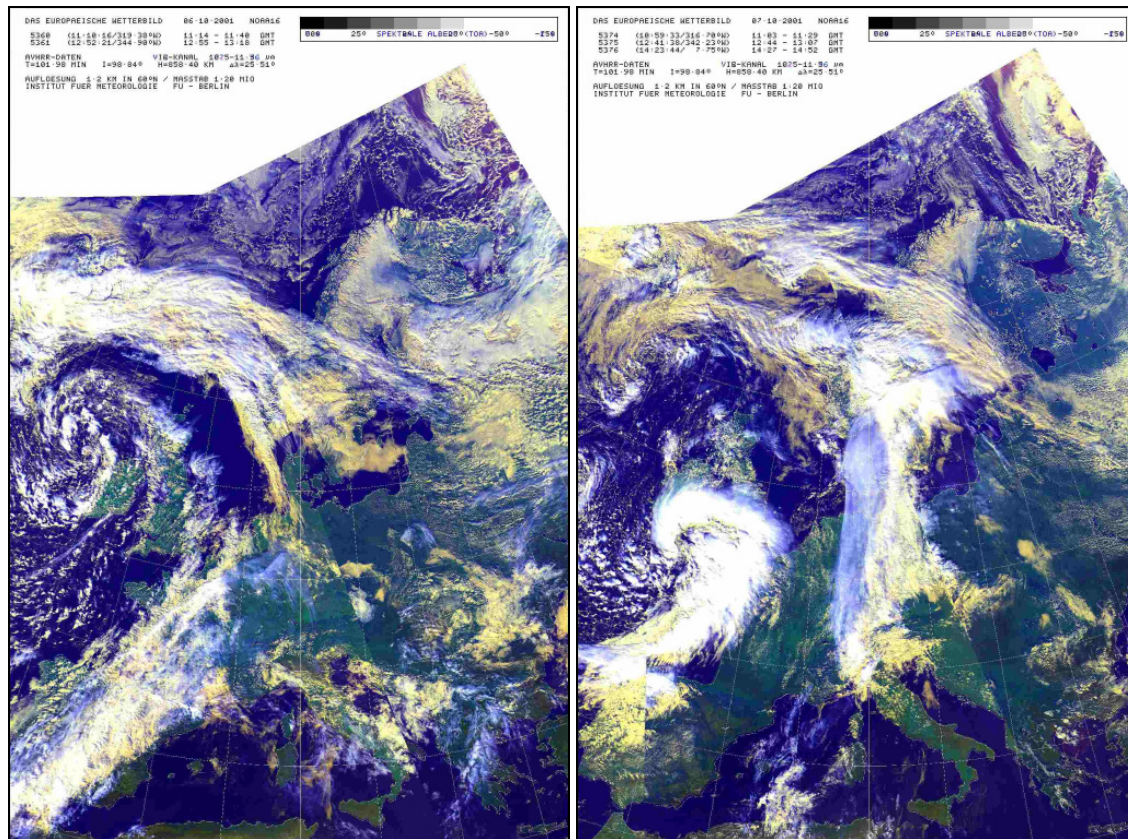


Fig. B10: NOAA satellite pictures on 06 and 07 October 2001 (source: Berliner Wetterkarte, 2001).

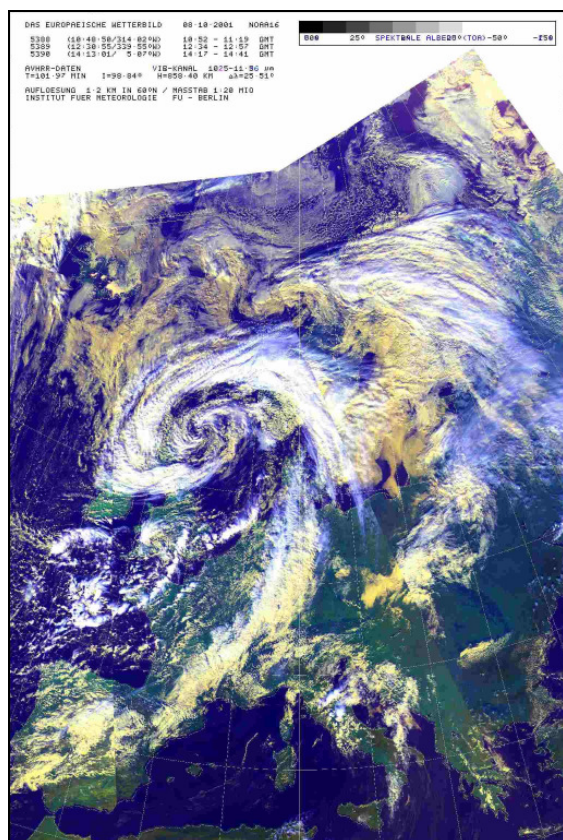
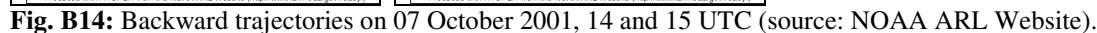
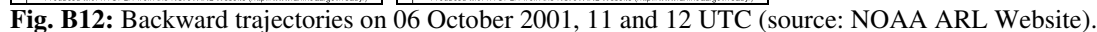


Fig. B11: NOAA satellite picture on 08 October 2001 (source: Berliner Wetterkarte, 2001).



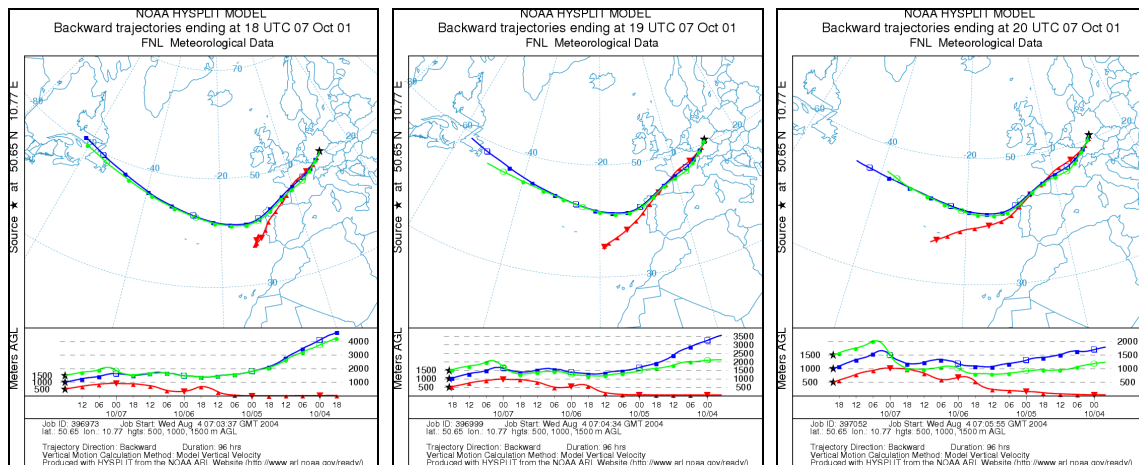


Fig. B15: Backward trajectories on 07 October 2001, 18, 19, and 20 UTC (source: NOAA ARL Website).

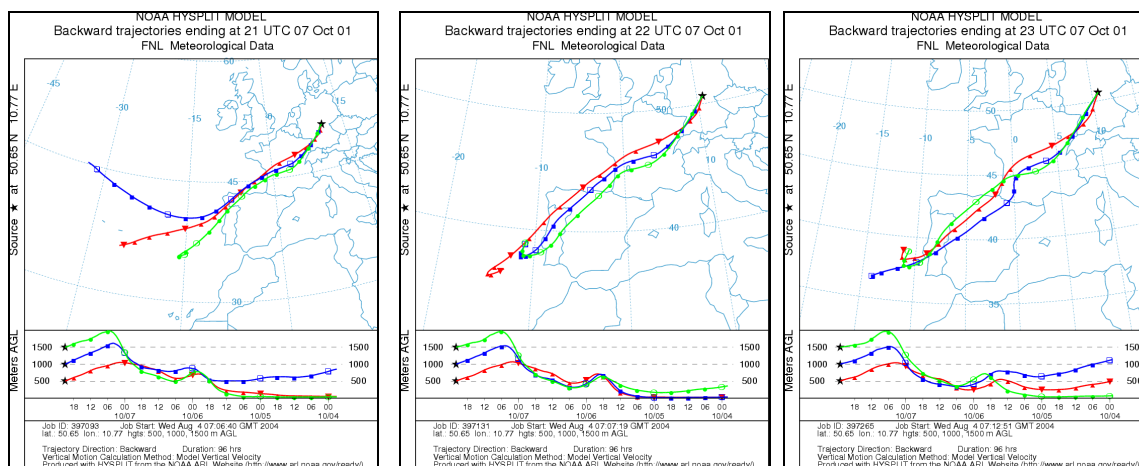


Fig. B16: Backward trajectories on 07 October 2001, 21, 22, and 23 UTC (source: NOAA ARL Website).

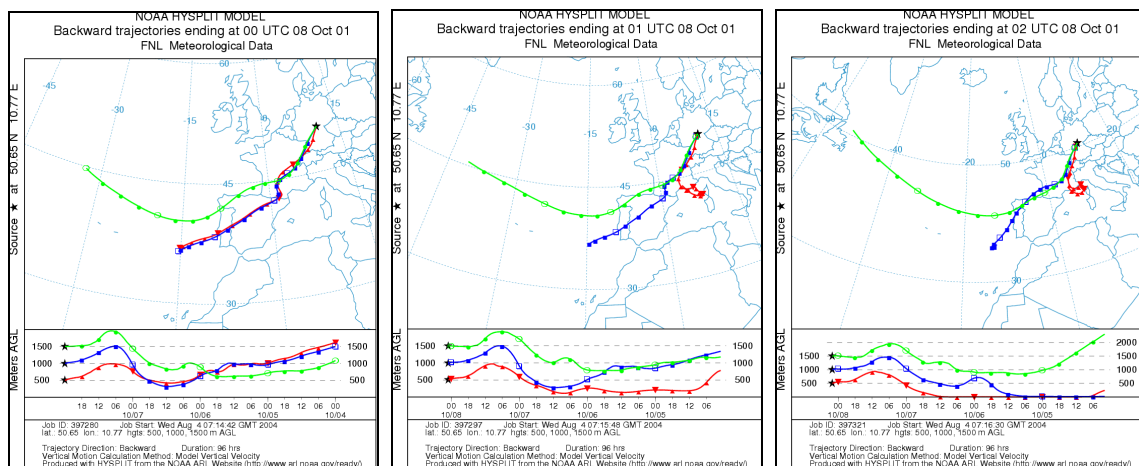


Fig. B17: Backward trajectories on 08 October 2001, 00, 01, and 02 UTC (source: NOAA ARL Website).

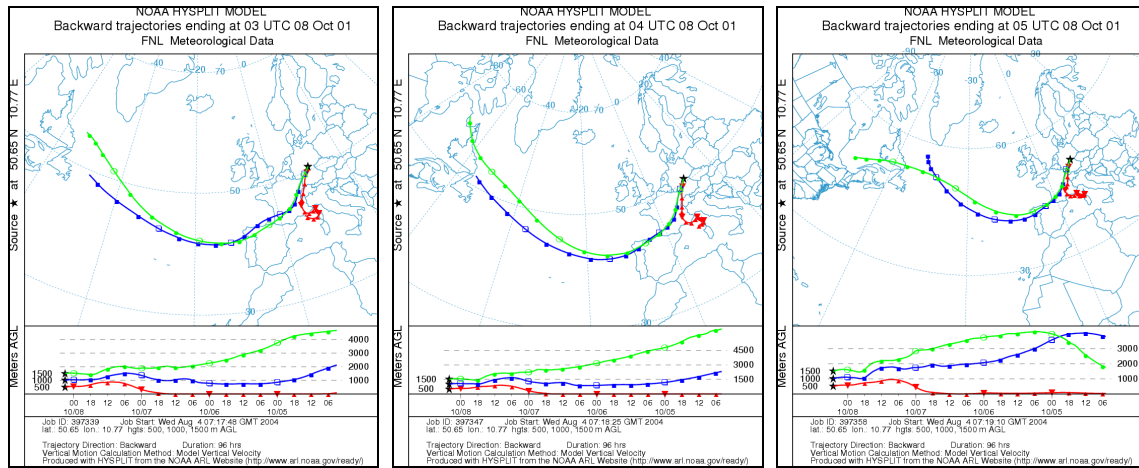


Fig. B18: Backward trajectories on 08 October 2001, 03, 04 and 05 UTC (source: NOAA ARL Website).

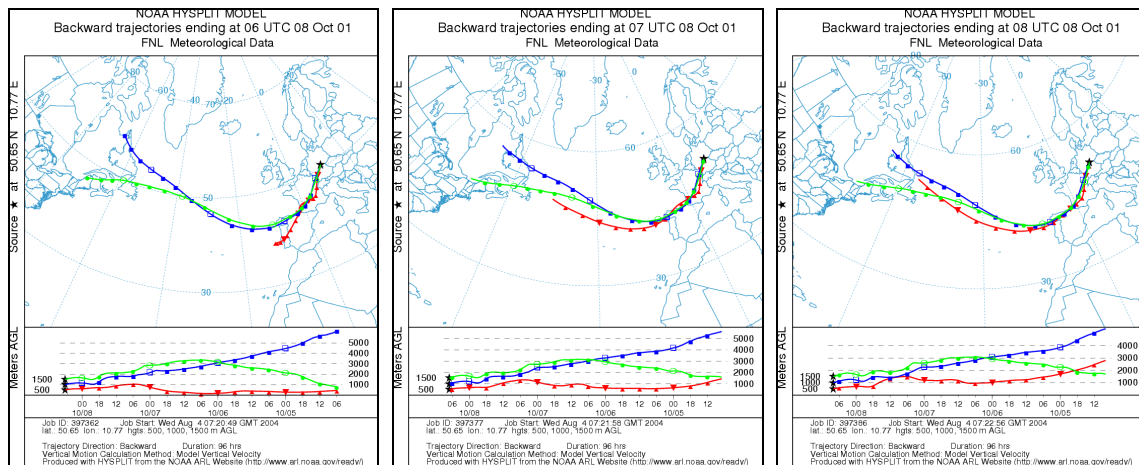


Fig. B19: Backward trajectories on 08 October 2001, 06, 07, and 08 UTC (source: NOAA ARL Website).

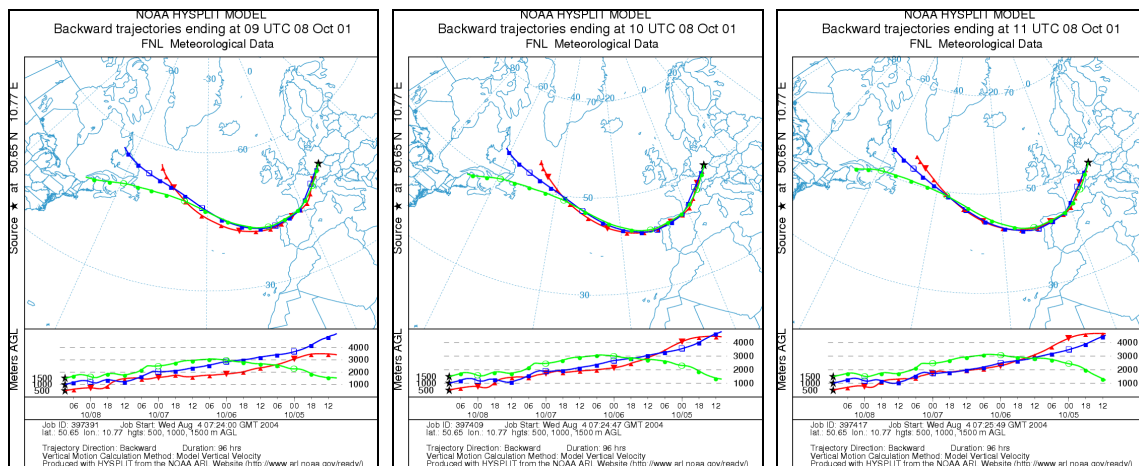


Fig. B20: Backward trajectories on 08 October 2001, 09, 10, and 11 UTC (source: NOAA ARL Website).

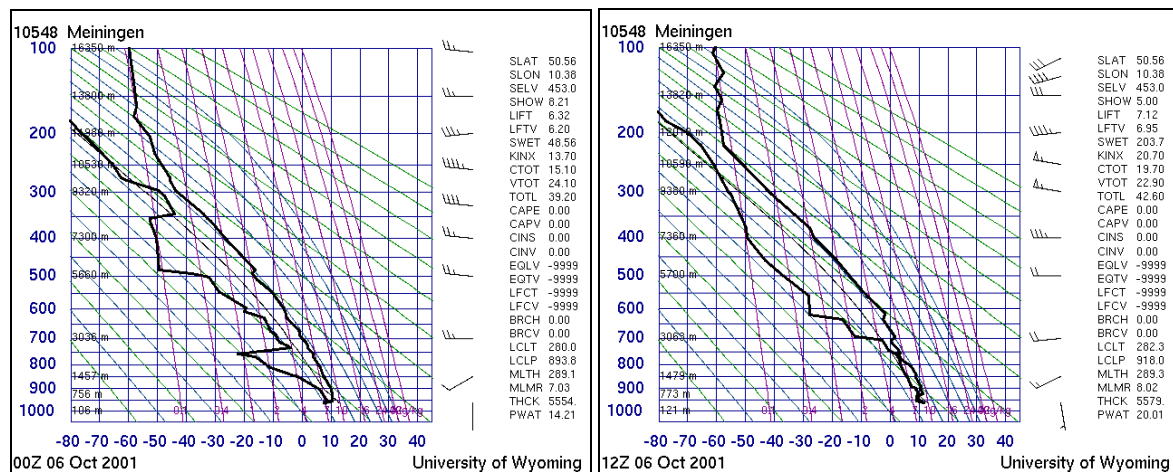


Fig. B21: Vertical rawinsonde profiles of temperature and dew-point temperature on 06 October 2001, 00 and 12 UTC (source: University of Wyoming).

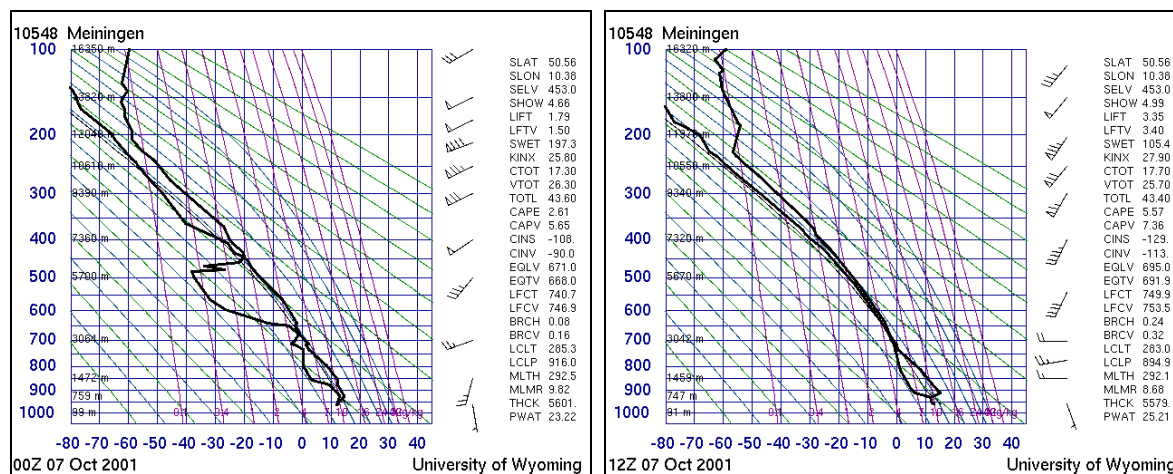


Fig. B22: Vertical rawinsonde profiles of temperature and dew-point temperature on 07 October 2001, 00 and 12 UTC (source: University of Wyoming).

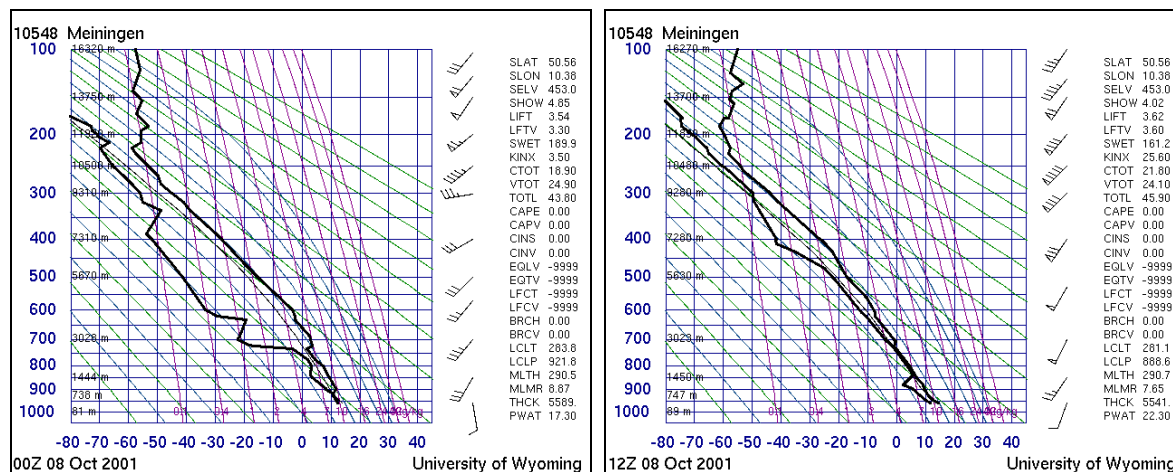


Fig. B23: Vertical rawinsonde profiles of temperature and dew-point temperature on 08 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table B1: Locally measured meteorological data at the summit station Schmücke on 06 October 2001 (source: DWD)

Time (UTC)	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Bar pressure [hPa]
0:00	8.3	100.0	0.0	230.0	5.7	903.5
0:10	8.2	100.0	0.0	230.0	4.4	903.5
0:20	8.2	100.0	0.0	230.0	4.2	903.6
0:30	8.1	100.0	0.0	230.0	4.0	903.7
0:40	8.1	100.0	0.0	230.0	3.9	903.8
0:50	8.1	100.0	0.0	230.0	3.7	903.8
1:00	8.1	100.0	0.0	220.0	3.5	903.7
1:10	8.1	100.0	0.0	230.0	4.4	903.7
1:20	8.1	100.0	0.0	230.0	3.9	903.7
1:30	8.0	100.0	0.0	220.0	3.7	903.6
1:40	8.0	100.0	0.0	220.0	3.2	903.6
1:50	8.0	100.0	0.0	220.0	3.0	903.6
2:00	8.0	100.0	0.0	230.0	2.8	903.6
2:10	8.1	100.0	0.0	230.0	2.9	903.6
2:20	8.0	100.0	0.0	230.0	3.0	903.6
2:30	8.0	100.0	0.0	230.0	3.4	903.6

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Bar pressure [hPa]
2:40	8.0	100.0	0.0	230.0	3.7	903.7
2:50	8.0	100.0	0.0	230.0	3.5	903.8
3:00	8.1	100.0	0.0	230.0	3.8	903.8
3:10	8.2	100.0	0.0	230.0	3.8	903.7
3:20	8.1	100.0	0.0	230.0	3.7	903.8
3:30	7.9	100.0	0.0	220.0	3.8	903.9
3:40	7.9	100.0	0.0	220.0	3.9	904.0
3:50	7.9	100.0	0.0	230.0	3.8	904.0
4:00	7.9	100.0	0.0	230.0	4.0	904.0
4:10	7.9	100.0	0.0	220.0	4.1	904.0
4:20	7.9	100.0	0.0	220.0	4.4	904.1
4:30	7.8	100.0	0.0	220.0	4.5	904.1
4:40	7.8	100.0	0.0	220.0	4.1	904.0
4:50	7.8	100.0	0.0	220.0	4.9	904.1
5:00	7.7	100.0	0.0	220.0	4.5	904.1
5:10	7.7	100.0	0.0	220.0	4.6	904.1
5:20	7.7	100.0	0.0	220.0	4.8	904.2
5:30	7.7	100.0	0.0	220.0	4.7	904.2
5:40	7.7	100.0	0.0	220.0	4.3	904.2
5:50	7.7	100.0	0.0	220.0	4.2	904.1
6:00	7.8	100.0	0.0	220.0	4.6	904.1
6:10	7.9	100.0	0.0	220.0	4.2	904.1
6:20	8.0	100.0	0.0	230.0	3.5	904.1
6:30	8.1	100.0	0.0	230.0	3.2	904.1
6:40	8.3	100.0	0.0	230.0	4.0	904.2
6:50	8.4	100.0	0.0	230.0	4.5	904.4
7:00	8.4	100.0	0.0	230.0	4.9	904.4
7:10	8.5	100.0	0.0	220.0	4.6	904.5
7:20	8.5	100.0	0.0	220.0	4.2	904.6
7:30	8.6	100.0	0.0	220.0	4.8	904.6
7:40	8.7	100.0	0.0	220.0	5.2	904.7
7:50	8.9	100.0	0.0	230.0	4.9	904.8
8:00	9.0	100.0	0.0	220.0	4.6	904.9
8:10	8.9	100.0	0.0	220.0	5.4	905.0
8:20	8.9	100.0	0.0	220.0	6.1	905.0
8:30	8.9	100.0	0.0	220.0	5.6	905.1
8:40	8.9	100.0	0.0	220.0	5.6	905.2
8:50	9.1	100.0	0.0	230.0	6.1	905.3
9:00	9.2	100.0	0.0	230.0	5.7	905.5
9:10	9.2	100.0	0.0	230.0	5.6	905.7
9:20	9.1	100.0	0.0	230.0	4.4	905.7
9:30	9.1	100.0	0.0	230.0	3.7	905.7
9:40	9.0	100.0	0.0	220.0	3.6	905.7
9:50	9.1	100.0	0.0	220.0	3.8	905.7
10:00	9.1	100.0	0.0	220.0	4.8	905.7
10:10	9.2	100.0	0.0	220.0	4.9	905.6
10:20	9.2	100.0	0.0	220.0	5.5	905.6
10:30	9.3	100.0	0.0	220.0	5.5	905.5
10:40	9.7	100.0	0.0	220.0	6.1	905.5
10:50	9.9	100.0	0.0	220.0	6.2	905.4
11:00	10.2	100.0	0.0	220.0	6.7	905.4
11:10	10.3	100.0	0.0	230.0	7.0	905.3
11:20	10.3	100.0	0.0	230.0	7.3	905.3
11:30	10.3	100.0	0.0	230.0	7.3	905.3
11:40	10.3	100.0	0.0	230.0	7.8	905.5
11:50	10.4	100.0	0.0	230.0	6.8	905.3
12:00	10.4	100.0	0.0	220.0	6.4	905.4
12:10	10.5	100.0	0.0	220.0	5.8	905.4
12:20	10.7	100.0	0.0	220.0	6.0	905.3
12:30	10.7	100.0	0.0	220.0	6.1	905.2
12:40	10.8	100.0	0.0	220.0	5.4	905.2
12:50	10.8	100.0	0.0	220.0	5.9	905.2
13:00	10.9	100.0	0.0	220.0	6.2	905.2
13:10	10.9	100.0	0.0	220.0	6.1	905.1
13:20	10.9	100.0	0.0	210.0	6.2	905.1
13:30	10.9	100.0	0.0	220.0	5.8	905.2
13:40	10.9	100.0	0.0	220.0	6.2	905.1
13:50	11.0	100.0	0.0	220.0	6.0	905.2
14:00	11.2	100.0	0.0	220.0	5.5	905.1
14:10	11.5	100.0	0.0	220.0	5.0	905.1
14:20	11.4	100.0	0.0	220.0	5.3	905.1
14:30	11.6	100.0	0.0	220.0	5.4	905.0
14:40	11.4	100.0	0.0	220.0	6.7	905.0
14:50	11.3	100.0	0.0	220.0	5.6	905.2
15:00	11.3	100.0	0.0	220.0	5.3	905.2
15:10	11.3	100.0	0.0	210.0	4.8	905.2
15:20	11.2	100.0	0.0	210.0	5.5	905.2
15:30	11.1	100.0	0.0	210.0	5.3	905.2
15:40	11.1	100.0	0.0	210.0	4.7	905.2
15:50	11.1	100.0	0.0	210.0	4.7	905.1
16:00	11.1	100.0	0.0	210.0	4.2	905.1
16:10	11.1	100.0	0.0	210.0	3.7	905.0
16:20	11.1	100.0	0.0	210.0	4.2	905.1
16:30	11.1	100.0	0.0	210.0	3.7	905.0
16:40	11.1	100.0	0.0	210.0	3.1	905.1
16:50	11.1	100.0	0.0	200.0	3.6	905.0
17:00	11.2	100.0	0.0	190.0	3.3	905.0
17:10	11.2	100.0	0.0	180.0	2.6	905.0
17:20	11.1	100.0	0.0	180.0	2.6	904.9
17:30	11.1	100.0	0.0	180.0	2.6	905.0
17:40	11.1	100.0	0.0	190.0	2.7	905.0
17:50	11.2	100.0	0.0	180.0	2.7	905.1
18:00	11.2	100.0	0.0	190.0	3.0	905.3
18:10	11.3	100.0	0.0	190.0	2.9	905.1
18:20	11.3	100.0	0.0	180.0	2.7	905.1
18:30	11.3	100.0	0.0	180.0	2.6	905.1
18:40	11.3	100.0	0.0	180.0	3.1	905.2
18:50	11.3	100.0	0.0	160.0	3.5	905.1
19:00	11.3	100.0	0.0	170.0	3.4	905.2
19:10	11.4	100.0	0.0	170.0	3.1	905.1
19:20	11.4	100.0	0.0	160.0	3.2	905.1
19:30	11.4	100.0	0.0	160.0	3.5	905.1
19:40	11.5	100.0	0.0	160.0	3.7	905.1
19:50	11.5	100.0	0.0	160.0	3.7	904.9
20:00	11.4	100.0	0.0	160.0	3.7	905.0
20:10	11.3	100.0	0.0	160.0	3.7	904.9
20:20	11.2	100.0	0.0	160.0	3.6	904.8
20:30	11.3	100.0	0.0	170.0	3.9	904.9
20:40	11.4	100.0	0.0	170.0	3.5	904.9
20:50	11.4	100.0	0.0	180.0	3.3	904.8
21:00	11.4	100.0	0.0	180.0	3.3	904.8
21:10	11.5	100.0	0.0	170.0	3.2	904.7
21:20	11.5	100.0	0.0	170.0	3.5	904.6
21:30	11.6	100.0	0.0	170.0	3.8	904.6
21:40	11.6	100.0	0.0	170.0	3.8	904.6
21:50	11.6	100.0	0.0	170.0	4.1	904.6
22:00	11.8	100.0	0.0	160.0	4.2	904.5
22:10	11.8	100.0	0.0	170.0	4.0	904.4
22:20	11.9	100.0	0.0	180.0	4.0	904.5
22:30	12.0	100.0	0.0	190.0	4.5	904.5
22:40	12.0	100.0	0.0	190.0	4.1	904.5
22:50	11.9	100.0	0.0	190.0	3.5	904.3
23:00	11.9	100.0	0.0	190.0	4.4	904.2
23:10	11.8	100.0	0.0	190.0	4.5	904.2
23:20	11.8	100.0	0.0	190.0	3.9	904.0
23:30	11.7	100.0	0.0	200.0	4.1	904.1
23:40	11.7	100.0	0.0	200.0	3.5	903.9
23:50	11.6	100.0	0.0	200.0	3.6	903.9

Table B2: Locally measured meteorological data at the summit station Schmücke on 07 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Bar pressure [hPa]
0:00	11.6	100.0	0.0	190.0	4.1	903.8
0:10	11.5	100.0	0.0	190.0	4.2	903.7
0:20	11.4	100.0	0.0	190.0	4.0	903.6
0:30	11.3	100.0	0.0	190.0	4.9	903.5
0:40	11.2	100.0	0.0	180.0	5.0	903.4
0:50	11.3	100.0	0.0	180.0	5.5	903.3
1:00	11.2	100.0	0.0	190.0	5.4	903.3
1:10	11.1	100.0	0.0	190.0	5.2	903.2
1:20	11.1	100.0	0.0	190.0	5.0	903.1
1:30	11.1	100.0	0.0	190.0	5.6	903.1
1:40	11.0	100.0	0.0	190.0	5.1	903.0
1:50	11.0	100.0	0.0	180.0	5.6	902.9
2:00	11.2	100.0	0.0	190.0	5.9	902.9
2:10	11.2	100.0	0.0	190.0	5.5	903.0
2:20	11.3	100.0	0.0	190.0	5.9	902.9
2:30	11.4	97.0	0.0	190.0	6.3	902.9
2:40	11.4	94.0	0.0	200.0	5.8	902.9
2:50	11.2	93.0	0.0	200.0	4.7	902.7
3:00	11.0	93.0	0.0	220.0	4.3	902.6
3:10	10.9	94.0	0.0	230.0	5.8	902.6
3:20	10.9	94.0	0.0	230.0	5.9	902.7
3:30	10.8	95.0	0.0	220.0	5.7	902.6
3:40	10.7	96.0	0.0	220.0	5.5	902.5
3:50	10.7	96.0	0.0	220.0	4.4	902.4
4:00	10.7	97.0	0.0	230.0	3.7	902.3
4:10	10.6	97.0	0.0	220.0	3.0	902.3
4:20	10.6	97.0	0.0	200.0	2.1	902.0
4:30	10.6	97.0	0.0	220.0	2.5	902.2
4:40	10.5	98.0	0.0	220.0	3.3	902.1
4:50	10.4	98.0	0.0	220.0	4.5	902.3
5:00	10.3	99.0	0.0	220.0	4.0	902.3
5:10	10.3	99.0	0.0	210.0	3.9	902.4
5:20	10.2	100.0	0.9	220.0	4.4	902.4
5:30	10.1	100.0	0.9	220.0	3.7	902.4
5:40	10.1	100.0	1.0	210.0	3.8	902.4
5:50	10.1	100.0	1.2	210.0	4.0	902.3
6:00	10.1	100.0	0.8	210.0	4.2	902.2
6:10	10.1	100.0	0.8	210.0	4.1	902.1
6:20	10.1	100.0	0.8	220.0	4.7	902.1
6:30	10.2	100.0	1.4	210.0	5.4	902.1
6:40	10.2	100.0	2.1	220.0	5.7	902.1
6:50	10.2	100.0	2.6	220.0	5.3	902.4
7:00	10.3	100.0	1.0	230.0	4.7	902.4
7:10	10.4	100.0	1.0	220.0	4.5	902.3
7:20	10.4	100.0	1.0	220.0	5.5	902.3
7:30	10.3	100.0	1.0	220.0	6.2	902.4
7:40	10.1	100.0	0.4	220.0	5.3	902.3
7:50	10.0	100.0	0.3	220.0	4.8	902.3
8:00	10.3	100.0	0.3	220.0	5.0	902.1
8:10	10.6	100.0	0.2	220.0	5.8	902.1
8:20	10.8	100.0	0.0	230.0	6.2	902.1
8:30	11.0	100.0	0.0	220.0	6.6	902.3
8:40	11.2	100.0	0.2	220.0	7.3	902.4
8:50	11.2	100.0	1.1	220.0	7.2	902.6
9:00	11.2	100.0	2.7	220.0	6.8	902.7
9:10	11.2	100.0	2.8	220.0	6.1	902.9
9:20	11.2	100.0	3.2	230.0	5.5	903.0
9:30	11.1	100.0	4.4	220.0	4.7	903.0
9:40	10.8	100.0	3.3	220.0	4.5	903.1
9:50	10.7	100.0	2.7	210.0	4.3	903.1
10:00	10.7	100.0	1.7	220.0	3.9	903.1
10:10	10.8	100.0	1.5	230.0	4.2	903.1
10:20	10.8	100.0	1.3	230.0	4.8	903.3
10:30	10.9	100.0	2.2	220.0	4.4	903.3
10:40	11.0	100.0	1.7	230.0	4.9	903.4
10:50	11.0	100.0	1.4	230.0	5.3	903.4
11:00	11.0	100.0	1.1	230.0	5.2	903.3
11:10	11.0	100.0	2.6	220.0	5.2	903.4
11:20	11.1	100.0	1.7	220.0	4.3	903.2
11:30	11.2	100.0	1.0	220.0	3.7	903.1
11:40	11.2	100.0	0.7	190.0	2.1	902.5
11:50	11.4	100.0	0.5	180.0	1.5	902.5
12:00	11.3	100.0	0.3	130.0	3.4	902.0
12:10	11.2	100.0	0.1	220.0	4.3	902.9
12:20	11.3	100.0	0.0	240.0	4.5	903.1
12:30	11.1	100.0	0.1	220.0	5.5	902.8
12:40	11.0	100.0	0.0	220.0	6.4	902.9
12:50	11.0	100.0	0.0	220.0	5.2	902.9
13:00	11.0	100.0	0.0	220.0	5.6	902.9
13:10	11.0	100.0	0.0	230.0	4.6	903.0
13:20	11.0	100.0	0.0	220.0	4.8	903.2
13:30	11.0	100.0	0.0	230.0	4.2	903.2
13:40	11.0	100.0	0.0	230.0	4.9	903.2
13:50	10.9	100.0	0.0	220.0	4.8	903.2
14:00	10.8	100.0	0.3	250.0	4.0	903.2
14:10	10.7	100.0	4.4	250.0	4.3	903.3
14:20	10.6	100.0	1.4	230.0	5.2	903.3
14:30	10.6	100.0	1.2	230.0	4.1	903.1
14:40	10.6	100.0	0.5	230.0	3.4	903.0
14:50	10.6	100.0	0.1	220.0	2.9	902.9
15:00	10.6	100.0	0.0	200.0	2.2	902.7
15:10	10.5	100.0	0.0	200.0	2.6	902.7
15:20	10.4	100.0	0.0	200.0	2.6	902.6
15:30	10.4	100.0	0.0	200.0	2.6	902.6
15:40	10.3	100.0	0.0	200.0	3.0	902.5
15:50	10.2	100.0	0.0	210.0	2.5	902.5
16:00	10.0	100.0	0.0	220.0	3.3	902.5
16:10	10.0	100.0	0.0	220.0	3.5	902.4
16:20	9.9	100.0	0.0	210.0	3.7	902.5
16:30	9.8	100.0	0.0	220.0	3.9	902.7
16:40	9.8	100.0	0.0	210.0	3.6	902.8
16:50	9.8	100.0	0.0	210.0	3.7	902.8
17:00	9.8	100.0	0.0	210.0	3.3	902.7
17:10	9.7	100.0	0.0	210.0	4.0	902.8
17:20	9.8	100.0	0.0	220.0	4.2	902.8
17:30	9.8	100.0	0.0	210.0	4.2	902.9
17:40	9.8	100.0	0.0	210.0	3.6	902.8
17:50	9.8	100.0	0.0	220.0	3.5	902.9
18:00	9.7	100.0	0.0	210.0	3.9	902.9
18:10	9.7	100.0	0.0	210.0	3.7	903.0
18:20	9.7	100.0	0.0	200.0	3.1	902.9
18:30	9.6	100.0	0.0	200.0	3.2	902.9
18:40	9.6	100.0	0.0	200.0	3.4	902.9
18:50	9.6	100.0	0.0	200.0	2.8	902.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Bir pressure [hPa]
19:00	9.5	100.0	0.0	200.0	2.7	902.9
19:10	9.5	100.0	0.0	180.0	2.9	902.8
19:20	9.5	100.0	0.0	180.0	3.1	902.7
19:30	9.6	100.0	0.0	190.0	3.3	902.7
19:40	9.7	100.0	0.0	200.0	3.4	902.6
19:50	9.7	100.0	0.0	200.0	3.8	902.6
20:00	9.7	100.0	0.0	210.0	5.0	902.5
20:10	9.7	100.0	0.0	200.0	4.9	902.3
20:20	9.8	100.0	0.0	200.0	5.1	902.2
20:30	9.8	100.0	0.0	200.0	5.0	902.1
20:40	9.7	100.0	0.0	190.0	5.4	902.0
20:50	9.7	100.0	0.0	200.0	5.5	902.0
21:00	9.6	100.0	0.0	200.0	5.7	902.0
21:10	9.6	100.0	0.0	200.0	5.4	901.9
21:20	9.6	100.0	0.0	190.0	4.8	901.8
21:30	9.6	100.0	0.0	200.0	5.6	901.9
21:40	9.6	100.0	0.0	200.0	5.9	901.7
21:50	9.7	100.0	0.0	200.0	7.2	901.8
22:00	9.7	100.0	0.0	200.0	6.5	901.8
22:10	9.7	100.0	0.0	210.0	7.3	901.8
22:20	9.7	100.0	0.0	210.0	7.4	901.6
22:30	9.8	100.0	0.0	210.0	7.9	901.5
22:40	9.8	100.0	0.0	210.0	8.6	901.6
22:50	9.9	100.0	0.0	210.0	8.2	901.6
23:00	9.8	100.0	0.0	210.0	8.1	901.5
23:10	9.8	100.0	0.0	210.0	8.9	901.5
23:20	9.7	100.0	0.0	210.0	8.9	901.5
23:30	9.7	100.0	0.0	210.0	8.8	901.4
23:40	9.7	100.0	0.0	210.0	9.3	901.2
23:50	9.7	100.0	0.0	210.0	8.9	901.3

Table B3: Locally measured meteorological data at the summit station Schmücke on 08 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Bir pressure [hPa]
0:00	9.7	100.0	0.0	210.0	8.7	901.2
0:10	9.7	100.0	0.0	210.0	9.8	901.1
0:20	9.7	100.0	0.0	210.0	9.3	901.1
0:30	9.7	100.0	0.0	210.0	8.2	901.0
0:40	9.7	100.0	0.0	210.0	7.2	901.1
0:50	9.7	100.0	0.0	200.0	7.8	901.0
1:00	9.7	100.0	0.0	200.0	7.0	901.0
1:10	9.7	100.0	0.0	200.0	7.4	900.9
1:20	9.7	100.0	0.0	200.0	7.5	900.9
1:30	9.7	100.0	0.0	210.0	8.0	900.9
1:40	9.7	100.0	0.0	210.0	8.0	901.0
1:50	9.8	100.0	0.0	210.0	8.2	901.1
2:00	9.8	100.0	0.0	210.0	8.6	901.2
2:10	9.7	100.0	0.0	210.0	8.2	901.2
2:20	9.8	100.0	0.0	210.0	8.3	901.2
2:30	9.8	100.0	0.0	210.0	7.0	901.2
2:40	9.8	100.0	0.0	210.0	6.9	901.3
2:50	9.8	100.0	0.0	220.0	6.3	901.3
3:00	9.8	100.0	0.0	210.0	6.8	901.3
3:10	9.7	100.0	0.0	210.0	6.9	901.3
3:20	9.7	100.0	0.0	210.0	6.4	901.3
3:30	9.7	100.0	0.0	210.0	6.8	901.3
3:40	9.7	100.0	0.0	210.0	7.3	901.4
3:50	9.6	100.0	0.0	210.0	7.6	901.5
4:00	9.6	100.0	0.0	210.0	7.6	901.5
4:10	9.6	100.0	0.0	210.0	8.2	901.7
4:20	9.6	100.0	0.0	210.0	6.8	901.7
4:30	9.6	100.0	0.0	210.0	7.7	901.6
4:40	9.6	100.0	0.0	210.0	6.8	901.4
4:50	9.6	100.0	0.0	210.0	6.3	901.5
5:00	9.5	100.0	0.0	210.0	6.5	901.6
5:10	9.5	100.0	0.0	220.0	6.9	901.7
5:20	9.5	100.0	0.0	210.0	6.7	901.8
5:30	9.4	100.0	0.0	210.0	7.2	901.9
5:40	9.4	100.0	0.0	210.0	7.6	902.1
5:50	9.4	100.0	0.0	210.0	7.8	902.1
6:00	9.4	100.0	0.0	210.0	7.3	902.1
6:10	9.5	100.0	0.0	210.0	7.5	902.0
6:20	9.4	100.0	0.0	210.0	6.9	902.1
6:30	9.4	100.0	0.0	210.0	7.7	902.1
6:40	9.4	100.0	0.0	210.0	7.2	902.2
6:50	9.4	100.0	0.0	210.0	7.0	902.2
7:00	9.5	100.0	0.0	210.0	7.5	902.2
7:10	9.5	100.0	0.0	210.0	7.7	902.4
7:20	9.6	100.0	0.0	210.0	8.3	902.4
7:30	9.6	100.0	0.0	210.0	8.6	902.4
7:40	9.6	100.0	0.0	210.0	8.0	902.4
7:50	9.5	100.0	0.0	210.0	8.4	902.3
8:00	9.5	100.0	0.0	210.0	8.8	902.3
8:10	9.5	100.0	0.0	210.0	8.6	902.2
8:20	9.6	100.0	0.0	210.0	8.9	902.4
8:30	9.6	100.0	0.0	210.0	9.4	902.4
8:40	9.6	100.0	0.0	210.0	7.3	902.3
8:50	9.5	100.0	0.0	210.0	7.0	902.4
9:00	9.5	100.0	0.0	210.0	7.8	902.4
9:10	9.6	100.0	0.0	210.0	6.8	902.5
9:20	9.6	100.0	0.0	210.0	7.1	902.4
9:30	9.6	100.0	0.0	210.0	7.4	902.4
9:40	9.6	100.0	0.0	210.0	7.0	902.4
9:50	9.6	100.0	0.0	210.0	7.6	902.5
10:00	9.6	100.0	0.0	220.0	7.5	902.5
10:10	9.5	100.0	0.0	210.0	7.4	902.5
10:20	9.6	100.0	0.0	210.0	7.5	902.5
10:30	9.6	100.0	0.0	210.0	7.5	902.6
10:40	9.6	100.0	0.0	210.0	6.6	902.7
10:50	9.6	100.0	0.0	210.0	6.6	902.8
11:00	9.7	100.0	0.0	210.0	6.6	902.8
11:10	9.4	100.0	0.0	210.0	8.3	902.7
11:20	9.6	100.0	0.0	210.0	7.5	902.7
11:30	9.8	100.0	0.0	210.0	7.8	902.7
11:40	9.6	100.0	0.0	210.0	8.1	902.7
11:50	9.7	100.0	0.0	210.0	8.1	902.5
12:00	9.6	100.0	0.0	210.0	8.3	902.7
12:10	9.7	100.0	0.0	210.0	7.3	902.7
12:20	9.6	100.0	0.0	210.0	8.1	902.7
12:30	9.5	100.0	0.0	220.0	7.7	902.9
12:40	9.4	100.0	0.0	210.0	7.3	902.8
12:50	9.4	100.0	0.0	210.0	7.0	902.9
13:00	9.2	100.0	0.0	220.0	7.8	903.1
13:10	9.1	100.0	0.0	220.0	7.8	903.1
13:20	9.0	100.0	0.0	220.0	7.1	903.0
13:30	9.0	100.0	0.0	210.0	6.1	903.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Bar pressure [hPa]
13:40	8.9	100.0	0.0	220.0	6.1	903.3
13:50	8.8	100.0	0.0	220.0	5.7	903.3
14:00	8.8	100.0	0.0	220.0	5.8	903.4
14:10	8.7	100.0	0.0	240.0	5.2	903.6
14:20	8.3	100.0	0.0	240.0	5.1	903.7
14:30	8.0	100.0	0.0	240.0	6.1	903.9
14:40	7.8	100.0	0.6	240.0	5.6	903.9
14:50	7.6	100.0	0.4	240.0	6.0	904.0
15:00	7.3	100.0	1.0	240.0	6.0	904.2
15:10	7.2	100.0	1.9	230.0	5.6	904.1
15:20	7.1	100.0	1.6	220.0	5.7	904.2
15:30	7.1	100.0	2.2	220.0	6.0	904.1
15:40	7.1	100.0	1.8	220.0	6.7	904.1
15:50	7.0	100.0	0.9	220.0	7.1	903.7
16:00	6.9	100.0	0.3	200.0	6.4	903.1
16:10	6.9	100.0	0.2	220.0	7.0	903.4
16:20	6.9	100.0	0.1	220.0	7.7	903.6
16:30	7.0	100.0	0.0	220.0	6.8	903.5
16:40	7.0	100.0	0.0	220.0	6.9	903.3
16:50	6.8	100.0	0.1	220.0	8.2	903.6
17:00	6.8	100.0	0.1	220.0	8.6	903.7
17:10	6.7	100.0	0.2	220.0	7.6	904.0
17:20	6.6	100.0	0.0	220.0	6.7	903.9
17:30	6.6	100.0	0.1	220.0	6.7	903.9
17:40	6.5	100.0	0.0	220.0	7.2	903.9
17:50	6.4	100.0	0.0	220.0	7.6	904.0
18:00	6.4	100.0	0.0	220.0	6.6	903.8
18:10	6.4	100.0	0.0	220.0	6.2	904.0
18:20	6.4	100.0	0.0	220.0	5.6	903.9
18:30	6.4	100.0	0.0	220.0	7.2	903.9
18:40	6.4	100.0	0.0	220.0	7.1	903.9
18:50	6.5	100.0	0.0	230.0	7.6	904.0
19:00	6.5	100.0	0.0	220.0	6.9	903.8
19:10	6.5	100.0	0.0	220.0	7.1	904.2
19:20	6.5	100.0	0.0	220.0	8.6	904.8
19:30	6.5	100.0	0.0	220.0	9.4	905.1
19:40	6.6	100.0	0.0	220.0	9.1	905.2
19:50	6.6	100.0	0.0	220.0	8.6	905.4
20:00	6.5	100.0	0.0	220.0	8.1	905.1
20:10	6.5	100.0	0.0	220.0	6.5	904.9
20:20	6.6	100.0	0.0	220.0	6.5	905.0
20:30	6.5	100.0	0.0	220.0	6.4	904.9
20:40	6.5	100.0	0.0	220.0	6.5	905.3
20:50	6.5	100.0	0.6	210.0	6.1	905.1
21:00	6.4	100.0	0.2	210.0	5.9	905.1
21:10	6.4	100.0	1.0	200.0	5.2	904.4
21:20	6.4	100.0	0.3	190.0	3.6	904.0
21:30	6.4	100.0	0.1	230.0	6.4	904.6
21:40	6.5	100.0	0.1	210.0	8.5	904.8
21:50	6.3	100.0	0.0	210.0	9.2	904.5
22:00	6.2	100.0	0.0	220.0	9.3	904.9
22:10	6.3	100.0	0.0	220.0	9.9	904.9
22:20	6.3	100.0	0.0	220.0	8.1	904.5
22:30	6.2	100.0	0.1	220.0	8.0	904.2
22:40	6.2	100.0	0.0	220.0	7.9	904.7
22:50	6.2	100.0	0.0	220.0	8.0	904.8
23:00	6.2	100.0	0.0	220.0	8.2	904.8
23:10	6.3	100.0	0.0	220.0	9.2	904.7
23:20	6.3	100.0	0.0	220.0	10.1	904.7
23:30	6.3	100.0	0.0	220.0	9.4	904.6
23:40	6.4	100.0	0.0	220.0	9.6	904.7
23:50	6.4	100.0	0.0	220.0	9.1	904.8

C: The cloud event (08-10)-10-2001

This cloud event is also subdivided into three sections in which just the last two periods provided advantageous synoptical conditions. The first section ended after 1.5 hours caused by a passing occlusion and the associated precipitation processes. Over the next two days the high-pressure system from the Azores to Central France established itself and pushed the trough of low pressure northwards. Therefore, frontal disturbances did not affect the weather at the experimental site. The synoptical flow pattern over Central Europe was characterised by south-westerly winds with a tendency from southwest to west on 10 October and advection of Atlantic air masses. On 9 October the satellite pictures illustrate a residue of previous frontal cloudiness, which shows an eastward shifting as well as observable signs of dissolution in the daytime. A small band of orographic clouds covered the Thüringer Wald on 10 October. Between 04:45 and 10:30 the cloud base height decreased down to 100 m above the upwind site until 07:15 UTC and increased afterwards again until the summit came out of cloud. The backward trajectories on all three days show a south-westerly advection of maritime air masses from the Atlantic with a distinct cyclonic pattern, which became more anticyclonic influenced over the continent within the last section. In spite of the adequate meteorological condition in the last two sections the period is not a cloud event with advantageous requirements because the period was split into only short sections.

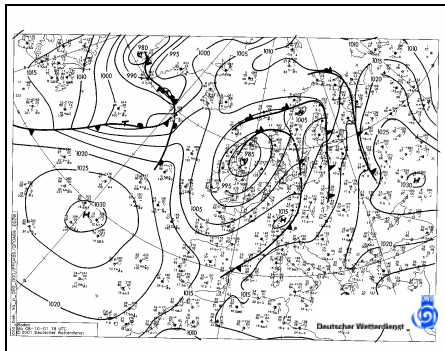


Fig. C1: Surface weather chart on 08 October 2001, 18 UTC (source: DWD).

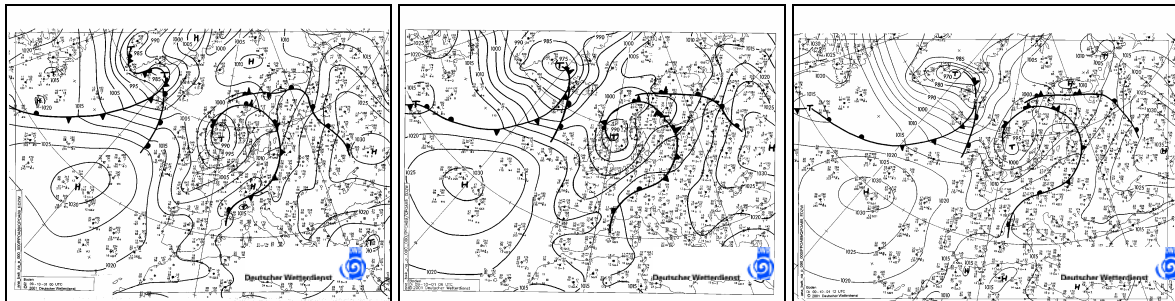


Fig. C2: Surface weather charts on 09 October 2001, 01, 06, and 12 UTC (source: DWD).

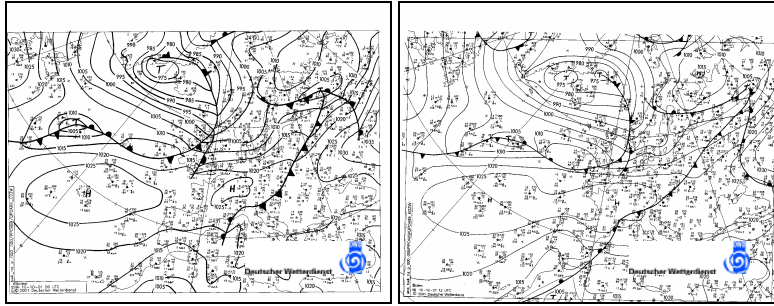


Fig. C3: Surface weather charts on 10 October 2001, 06 and 12 UTC (source: DWD).

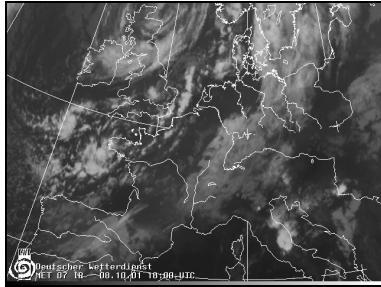


Fig. C4: IR-satellite pictures on 08 October 2001, 18 UTC (source: DWD).

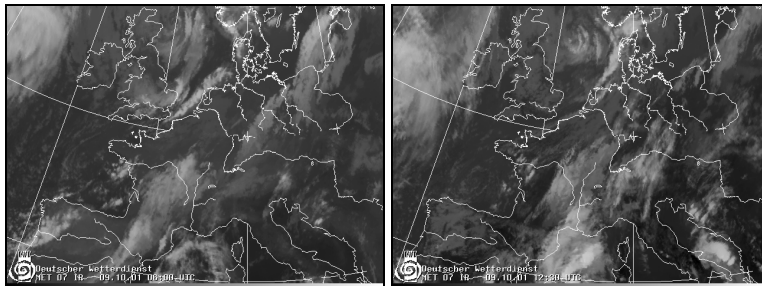


Fig. C5: IR-satellite pictures on 09 October 2001, 06 and 12:30 UTC (source: DWD).

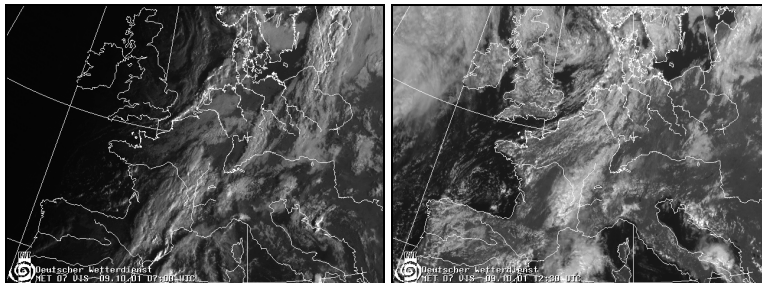


Fig. C6: VIS-satellite pictures on 09 October 2001, 07 and 12:30 UTC (source: DWD).

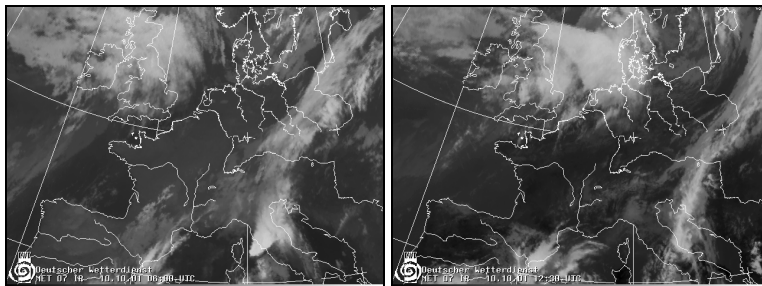


Fig. C7: IR-satellite pictures on 10 October 2001, 06 and 13:30 UTC (source: DWD).

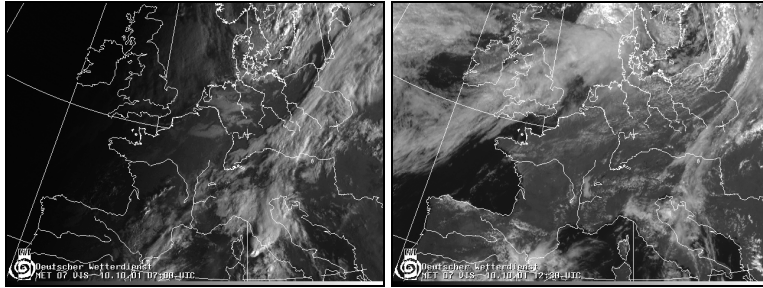


Fig. C8: VIS-satellite pictures on 10 October 2001, 07 and 12:30 UTC (source: DWD).

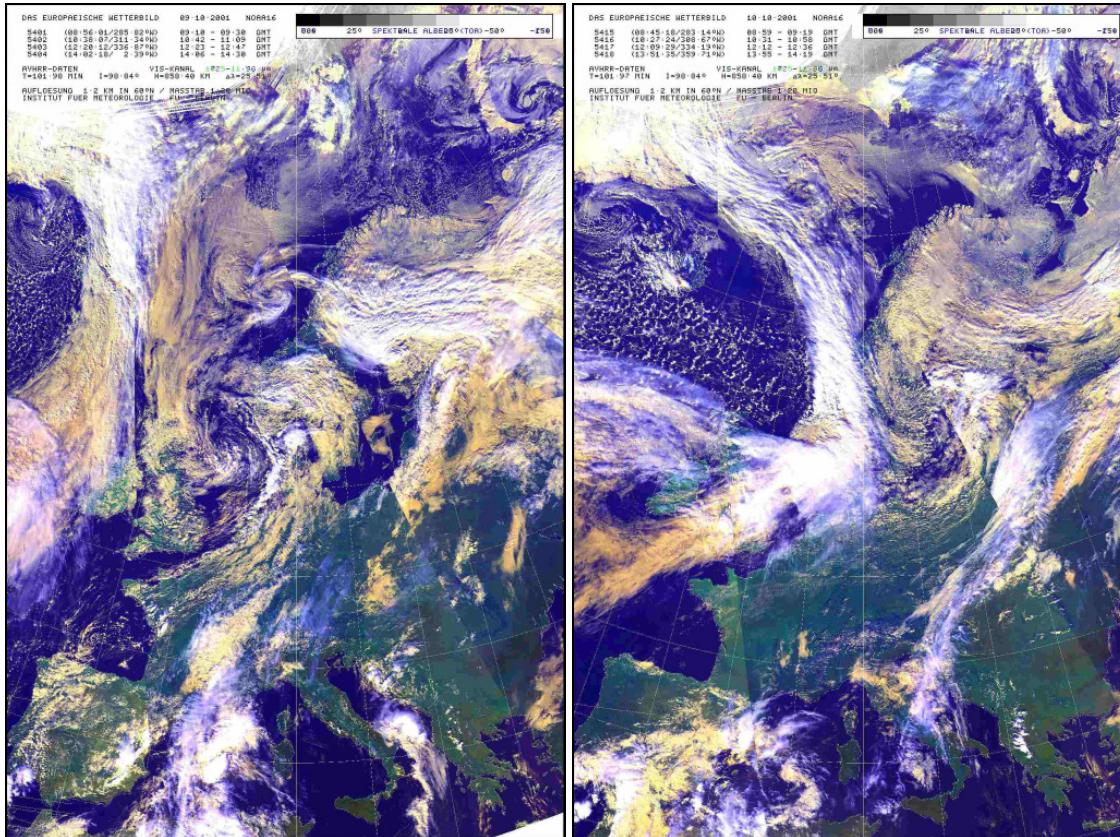


Fig. C9: NOAA satellite pictures on 09 and 10 October 2001 (source: Berliner Wetterkarte, 2001).

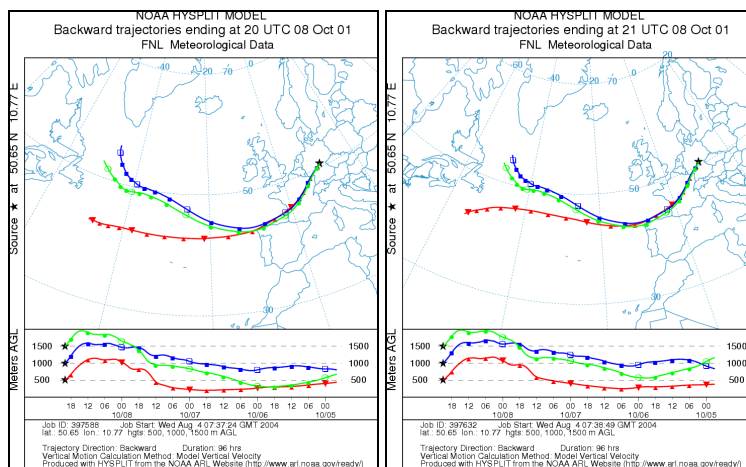


Fig. C10: Backward trajectories on 08 October 2001, 20 and 21 UTC (source: NOAA ARL Website).

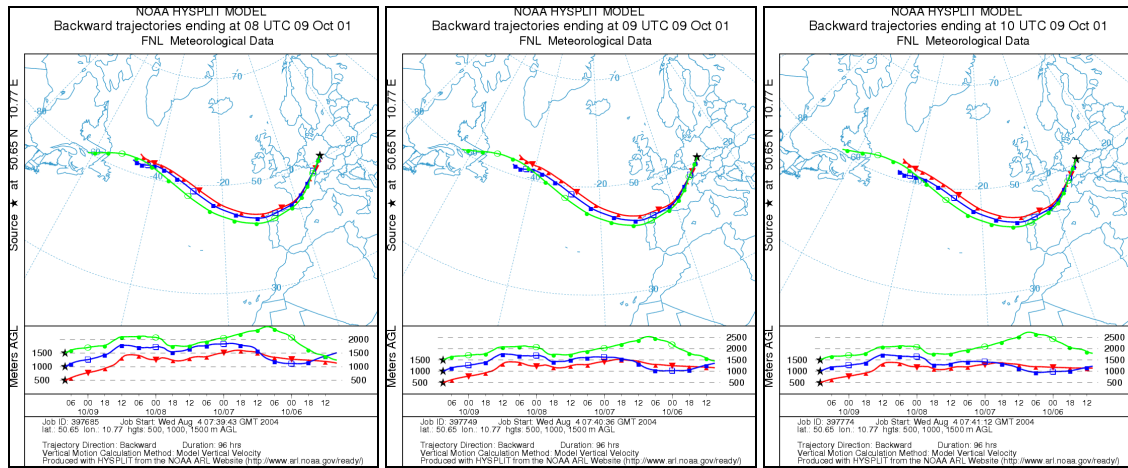


Fig. C11: Backward trajectories on 09 October 2001, 08, 09, and 10 UTC (source: NOAA ARL Website).

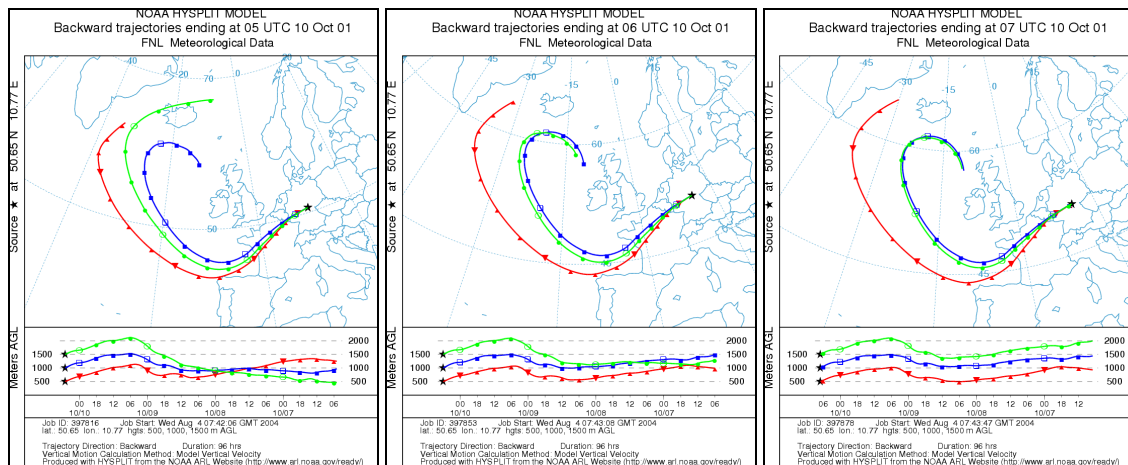


Fig. C12: Backward trajectories on 10 October 2001, 05, 06, and 07 UTC (source: NOAA ARL Website)

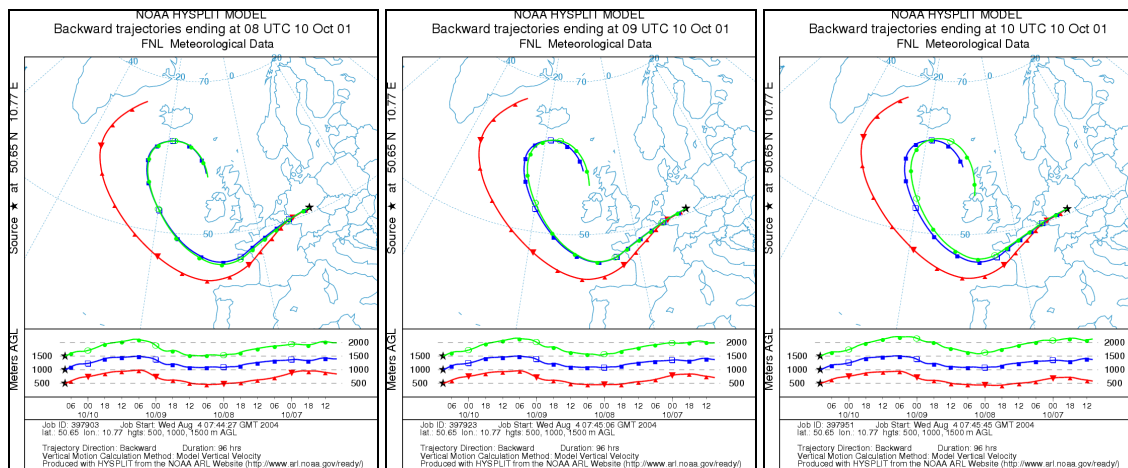


Fig. C13: Backward trajectories on 10 October 2001, 08, 09, and 10 UTC (source: NOAA ARL Website).

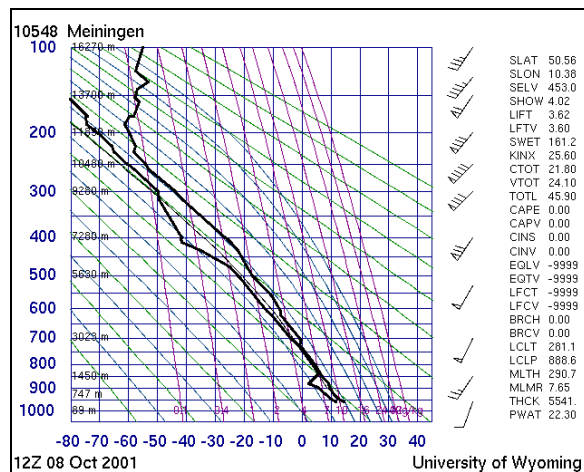


Fig. C14: Vertical rawinsonde profiles of temperature and dew-point temperature on 08 October 2001, 12 UTC (source: University of Wyoming).

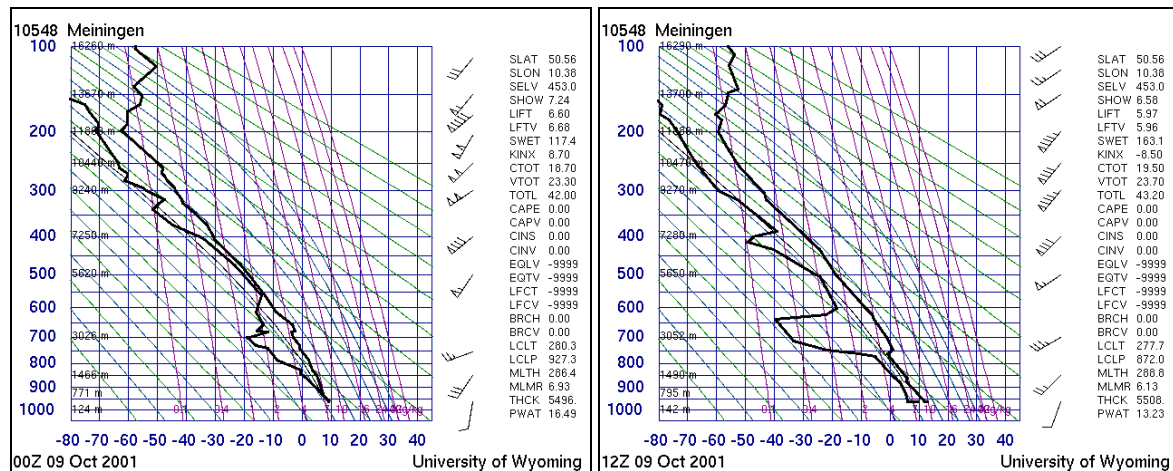


Fig. C15: Vertical rawinsonde profiles of temperature and dew-point temperature on 09 October 2001, 00 and 12 UTC (source: University of Wyoming).

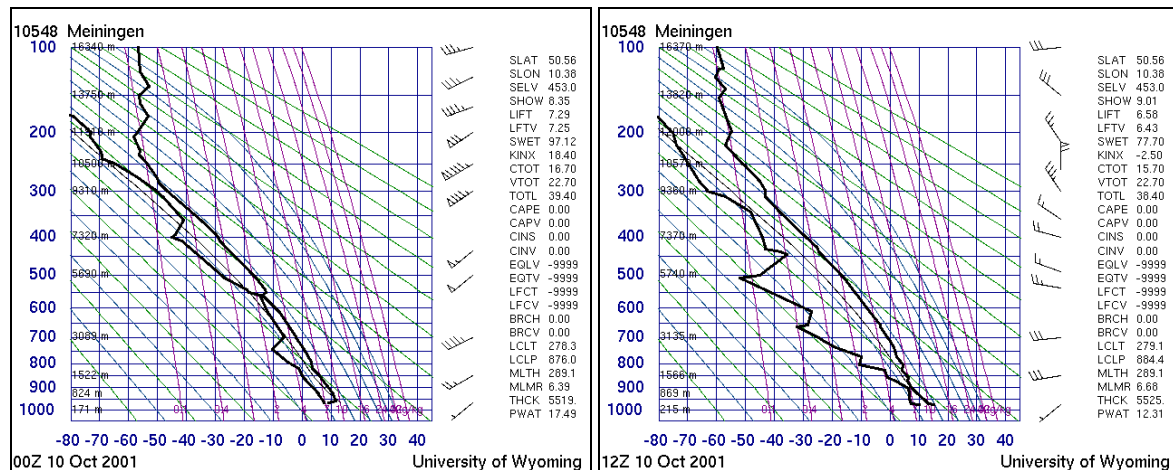


Fig. C16: Vertical rawinsonde profiles of temperature and dew-point temperature on 10 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table C1: Locally measured meteorological data at the summit station Schmücke on 08 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	9.7	100.0	0.0	210.0	8.7	901.2
0:10	9.7	100.0	0.0	210.0	9.8	901.1
0:20	9.7	100.0	0.0	210.0	9.3	901.1
0:30	9.7	100.0	0.0	210.0	8.2	901.0
0:40	9.7	100.0	0.0	210.0	7.2	901.1
0:50	9.7	100.0	0.0	200.0	7.8	901.0
1:00	9.7	100.0	0.0	200.0	7.0	901.0
1:10	9.7	100.0	0.0	200.0	7.4	900.9
1:20	9.7	100.0	0.0	200.0	7.5	900.9
1:30	9.7	100.0	0.0	210.0	8.0	900.9
1:40	9.7	100.0	0.0	210.0	8.0	901.0
1:50	9.8	100.0	0.0	210.0	8.2	901.1
2:00	9.8	100.0	0.0	210.0	8.6	901.2
2:10	9.7	100.0	0.0	210.0	8.2	901.2
2:20	9.8	100.0	0.0	210.0	8.3	901.2
2:30	9.8	100.0	0.0	210.0	7.0	901.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
2:40	9.8	100.0	0.0	210.0	6.9	901.3
2:50	9.8	100.0	0.0	220.0	6.3	901.3
3:00	9.8	100.0	0.0	210.0	6.8	901.3
3:10	9.7	100.0	0.0	210.0	6.9	901.3
3:20	9.7	100.0	0.0	210.0	6.4	901.3
3:30	9.7	100.0	0.0	210.0	6.8	901.3
3:40	9.7	100.0	0.0	210.0	7.3	901.4
3:50	9.6	100.0	0.0	210.0	7.6	901.5
4:00	9.6	100.0	0.0	210.0	7.6	901.5
4:10	9.6	100.0	0.0	210.0	8.2	901.7
4:20	9.6	100.0	0.0	210.0	6.8	901.7
4:30	9.6	100.0	0.0	210.0	7.7	901.6
4:40	9.6	100.0	0.0	210.0	6.8	901.4
4:50	9.6	100.0	0.0	210.0	6.3	901.5
5:00	9.5	100.0	0.0	210.0	6.5	901.6
5:10	9.5	100.0	0.0	220.0	6.9	901.7
5:20	9.5	100.0	0.0	210.0	6.7	901.8
5:30	9.4	100.0	0.0	210.0	7.2	901.9
5:40	9.4	100.0	0.0	210.0	7.6	902.1
5:50	9.4	100.0	0.0	210.0	7.8	902.1
6:00	9.4	100.0	0.0	210.0	7.3	902.1
6:10	9.5	100.0	0.0	210.0	7.5	902.0
6:20	9.4	100.0	0.0	210.0	6.9	902.1
6:30	9.4	100.0	0.0	210.0	7.7	902.1
6:40	9.4	100.0	0.0	210.0	7.2	902.2
6:50	9.4	100.0	0.0	210.0	7.0	902.2
7:00	9.5	100.0	0.0	210.0	7.5	902.2
7:10	9.5	100.0	0.0	210.0	7.7	902.4
7:20	9.6	100.0	0.0	210.0	8.3	902.4
7:30	9.6	100.0	0.0	210.0	8.6	902.4
7:40	9.6	100.0	0.0	210.0	8.0	902.4
7:50	9.5	100.0	0.0	210.0	8.4	902.3
8:00	9.5	100.0	0.0	210.0	8.8	902.3
8:10	9.5	100.0	0.0	210.0	8.6	902.2
8:20	9.6	100.0	0.0	210.0	8.9	902.4
8:30	9.6	100.0	0.0	210.0	9.4	902.4
8:40	9.6	100.0	0.0	210.0	7.3	902.3
8:50	9.5	100.0	0.0	210.0	7.0	902.4
9:00	9.5	100.0	0.0	210.0	7.8	902.4
9:10	9.6	100.0	0.0	210.0	6.8	902.5
9:20	9.6	100.0	0.0	210.0	7.1	902.4
9:30	9.6	100.0	0.0	210.0	7.4	902.4
9:40	9.6	100.0	0.0	210.0	7.0	902.4
9:50	9.6	100.0	0.0	210.0	7.6	902.5
10:00	9.6	100.0	0.0	220.0	7.5	902.5
10:10	9.5	100.0	0.0	210.0	7.4	902.5
10:20	9.6	100.0	0.0	210.0	7.5	902.5
10:30	9.6	100.0	0.0	210.0	7.5	902.6
10:40	9.6	100.0	0.0	210.0	6.6	902.7
10:50	9.6	100.0	0.0	210.0	6.6	902.8
11:00	9.7	100.0	0.0	210.0	6.6	902.8
11:10	9.4	100.0	0.0	210.0	8.3	902.7
11:20	9.6	100.0	0.0	210.0	7.5	902.7
11:30	9.8	100.0	0.0	210.0	7.8	902.7
11:40	9.6	100.0	0.0	210.0	8.1	902.7
11:50	9.7	100.0	0.0	210.0	8.1	902.5
12:00	9.6	100.0	0.0	210.0	8.3	902.7
12:10	9.7	100.0	0.0	210.0	7.3	902.7
12:20	9.6	100.0	0.0	210.0	8.1	902.7
12:30	9.5	100.0	0.0	220.0	7.7	902.9
12:40	9.4	100.0	0.0	210.0	7.3	902.8
12:50	9.4	100.0	0.0	210.0	7.0	902.9
13:00	9.2	100.0	0.0	220.0	7.8	903.1
13:10	9.1	100.0	0.0	220.0	7.8	903.1
13:20	9.0	100.0	0.0	220.0	7.1	903.0
13:30	9.0	100.0	0.0	210.0	6.1	903.2
13:40	8.9	100.0	0.0	220.0	6.1	903.3
13:50	8.8	100.0	0.0	220.0	5.7	903.3
14:00	8.8	100.0	0.0	220.0	5.8	903.4
14:10	8.7	100.0	0.0	240.0	5.2	903.6
14:20	8.3	100.0	0.0	240.0	5.1	903.7
14:30	8.0	100.0	0.0	240.0	6.1	903.9
14:40	7.8	100.0	0.6	240.0	5.6	903.9
14:50	7.6	100.0	0.4	240.0	6.0	904.0
15:00	7.3	100.0	1.0	240.0	6.0	904.2
15:10	7.2	100.0	1.9	240.0	5.6	904.1
15:20	7.1	100.0	1.6	220.0	5.7	904.2
15:30	7.1	100.0	2.2	220.0	6.0	904.1
15:40	7.1	100.0	1.8	220.0	6.7	904.1
15:50	7.0	100.0	0.9	220.0	7.1	903.7
16:00	6.9	100.0	0.3	200.0	6.4	903.1
16:10	6.9	100.0	0.2	220.0	7.0	903.4
16:20	6.9	100.0	0.1	220.0	7.7	903.6
16:30	7.0	100.0	0.0	220.0	6.8	903.5
16:40	7.0	100.0	0.0	220.0	6.9	903.3
16:50	6.8	100.0	0.1	220.0	8.2	903.6
17:00	6.8	100.0	0.1	220.0	8.6	903.7
17:10	6.7	100.0	0.2	220.0	7.6	904.0
17:20	6.6	100.0	0.0	220.0	6.7	903.9
17:30	6.6	100.0	0.1	220.0	6.7	903.9
17:40	6.5	100.0	0.0	220.0	7.2	903.9
17:50	6.4	100.0	0.0	220.0	7.6	904.0
18:00	6.4	100.0	0.0	220.0	6.6	903.8
18:10	6.4	100.0	0.0	220.0	6.2	904.0
18:20	6.4	100.0	0.0	220.0	5.6	903.9
18:30	6.4	100.0	0.0	220.0	7.2	903.9
18:40	6.4	100.0	0.0	220.0	7.1	903.9
18:50	6.5	100.0	0.0	230.0	7.6	904.0
19:00	6.5	100.0	0.0	220.0	6.9	903.8
19:10	6.5	100.0	0.0	220.0	7.1	904.2
19:20	6.5	100.0	0.0	220.0	8.6	904.8
19:30	6.5	100.0	0.0	220.0	9.4	905.1
19:40	6.6	100.0	0.0	220.0	9.1	905.2
19:50	6.6	100.0	0.0	220.0	8.6	905.4
20:00	6.5	100.0	0.0	220.0	8.1	905.1
20:10	6.5	100.0	0.0	220.0	6.5	904.9
20:20	6.6	100.0	0.0	220.0	6.5	905.0
20:30	6.5	100.0	0.0	220.0	6.4	904.9
20:40	6.5	100.0	0.0	220.0	6.5	905.3
20:50	6.5	100.0	0.6	210.0	6.1	905.1
21:00	6.4	100.0	0.2	210.0	5.9	905.1
21:10	6.4	100.0	1.0	200.0	5.2	904.4
21:20	6.4	100.0	0.3	190.0	3.6	904.0
21:30	6.4	100.0	0.1	230.0	6.4	904.6
21:40	6.5	100.0	0.1	210.0	8.5	904.8
21:50	6.3	100.0	0.0	210.0	9.2	904.5
22:00	6.2	100.0	0.0	220.0	9.3	904.9
22:10	6.3	100.0	0.0	220.0	9.9	904.9
22:20	6.3	100.0	0.0	220.0	8.1	904.5
22:30	6.2	100.0	0.1	220.0	8.0	904.2
22:40	6.2	100.0	0.0	220.0	7.9	904.7
22:50	6.2	100.0	0.0	220.0	8.0	904.8
23:00	6.2	100.0	0.0	220.0	8.2	904.8
23:10	6.3	100.0	0.0	220.0	9.2	904.7
23:20	6.3	100.0	0.0	220.0	10.1	904.7
23:30	6.3	100.0	0.0	220.0	9.4	904.6
23:40	6.4	100.0	0.0	220.0	9.6	904.7
23:50	6.4	100.0	0.0	220.0	9.1	904.8

Table C2: Locally measured meteorological data at the summit station Schmücke on 09 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	6.4	100.0	0.0	220.0	8.2	904.7
0:10	6.4	100.0	0.0	220.0	8.3	904.5
0:20	6.5	100.0	0.0	220.0	9.2	904.8
0:30	6.5	100.0	0.0	210.0	9.6	904.6
0:40	6.6	100.0	0.0	220.0	9.1	904.6
0:50	6.6	100.0	0.0	210.0	9.8	904.5
1:00	6.6	100.0	0.0	210.0	9.8	904.8
1:10	6.6	100.0	0.0	220.0	8.8	904.7
1:20	6.6	100.0	0.0	220.0	9.0	904.6
1:30	6.6	100.0	0.0	210.0	9.8	904.6
1:40	6.5	100.0	0.0	220.0	9.3	904.6
1:50	6.5	100.0	0.0	220.0	8.8	904.6
2:00	6.5	100.0	0.0	220.0	7.7	904.7
2:10	6.5	100.0	0.0	220.0	7.8	904.8
2:20	6.5	100.0	0.0	220.0	8.3	904.9
2:30	6.5	100.0	0.0	220.0	7.3	905.0
2:40	6.5	100.0	0.0	220.0	8.7	904.9
2:50	6.5	100.0	0.0	220.0	8.9	904.8
3:00	6.4	100.0	0.0	220.0	9.3	904.8
3:10	6.5	100.0	0.0	220.0	9.0	904.9
3:20	6.5	100.0	0.0	220.0	9.2	904.9
3:30	6.5	100.0	0.0	220.0	9.2	905.2
3:40	6.5	100.0	0.0	220.0	8.5	905.0
3:50	6.5	100.0	0.0	220.0	8.3	905.1
4:00	6.5	100.0	0.0	220.0	8.5	905.1
4:10	6.5	100.0	0.0	220.0	9.2	905.1
4:20	6.5	100.0	0.0	210.0	9.1	905.0
4:30	6.6	100.0	0.0	210.0	8.8	905.1
4:40	6.6	100.0	0.0	220.0	9.2	905.2
4:50	6.6	100.0	0.0	220.0	9.7	905.3
5:00	6.6	100.0	0.0	210.0	9.7	905.3
5:10	6.6	100.0	0.0	220.0	9.8	905.3
5:20	6.6	100.0	0.0	220.0	8.9	905.3
5:30	6.6	100.0	0.0	220.0	8.7	905.4
5:40	6.6	100.0	0.0	210.0	10.0	905.6
5:50	---	---	---	---	---	---
6:00	---	---	---	---	---	---
6:10	---	---	---	---	---	---
6:20	---	---	---	---	---	---
6:30	---	---	---	---	---	---
6:40	---	---	---	---	---	---
6:50	6.8	100.0	0.0	210.0	9.3	906.4
7:00	6.8	100.0	0.0	210.0	9.9	906.5
7:10	6.8	100.0	0.0	210.0	9.5	906.6
7:20	6.8	100.0	0.0	210.0	9.0	906.6
7:30	6.8	100.0	0.1	210.0	9.4	906.9
7:40	6.9	100.0	0.0	220.0	9.1	907.0
7:50	6.9	100.0	0.0	220.0	7.8	907.1
8:00	6.9	100.0	0.0	220.0	8.2	907.2
8:10	6.9	100.0	0.0	210.0	9.0	907.2
8:20	6.9	100.0	0.0	210.0	9.7	907.1
8:30	6.9	100.0	0.0	210.0	8.8	907.3
8:40	6.9	100.0	0.0	210.0	10.2	907.2
8:50	6.9	100.0	0.0	210.0	9.7	907.3
9:00	7.0	100.0	0.0	210.0	9.0	907.6
9:10	7.0	100.0	0.0	220.0	8.9	907.5
9:20	7.1	100.0	0.0	220.0	8.4	907.4
9:30	7.1	100.0	0.0	210.0	9.9	907.5
9:40	7.2	100.0	0.0	210.0	10.4	907.4
9:50	7.4	100.0	0.0	210.0	9.9	907.5
10:00	7.4	100.0	0.0	210.0	10.9	907.5
10:10	7.4	100.0	0.0	210.0	10.2	907.5
10:20	7.5	100.0	0.0	210.0	9.6	907.4
10:30	7.7	100.0	0.0	210.0	9.1	907.6
10:40	7.6	100.0	0.0	210.0	9.4	907.6
10:50	7.5	100.0	0.0	220.0	8.6	907.7
11:00	7.8	100.0	0.0	210.0	9.5	907.7
11:10	7.7	100.0	0.0	210.0	10.1	907.6
11:20	7.7	100.0	0.0	210.0	9.4	907.6
11:30	7.8	100.0	0.0	210.0	9.4	907.5
11:40	8.0	100.0	0.0	220.0	8.7	907.5
11:50	8.2	100.0	0.0	220.0	9.4	907.5
12:00	8.3	100.0	0.0	210.0	9.5	907.5
12:10	8.8	100.0	0.0	210.0	10.2	907.5
12:20	8.9	100.0	0.0	220.0	10.3	907.5
12:30	8.5	100.0	0.0	220.0	9.6	907.6
12:40	8.5	100.0	0.0	210.0	9.6	907.6
12:50	8.9	100.0	0.0	220.0	8.9	907.5
13:00	9.2	100.0	0.0	210.0	10.9	907.5
13:10	9.2	100.0	0.0	210.0	10.4	907.7
13:20	9.2	100.0	0.0	210.0	9.2	907.8
13:30	9.2	100.0	0.0	220.0	8.2	907.8
13:40	9.2	100.0	0.0	220.0	8.5	907.8
13:50	9.3	99.0	0.0	220.0	8.1	907.9
14:00	9.4	98.0	0.0	210.0	8.6	907.8
14:10	9.9	94.0	0.0	210.0	9.2	907.9
14:20	9.8	91.0	0.0	210.0	7.6	908.0
14:30	9.7	89.0	0.0	220.0	8.5	908.0
14:40	9.5	90.0	0.0	210.0	7.9	908.1
14:50	9.5	90.0	0.0	220.0	7.9	908.1
15:00	9.5	89.0	0.0	210.0	8.5	908.0
15:10	9.8	87.0	0.0	210.0	9.0	908.0
15:20	9.7	87.0	0.0	210.0	9.0	908.1
15:30	9.4	89.0	0.0	220.0	8.7	908.0
15:40	9.4	89.0	0.0	220.0	8.5	908.2
15:50	9.3	90.0	0.0	210.0	6.9	908.3
16:00	9.3	90.0	0.0	210.0	6.5	908.3
16:10	9.0	91.0	0.0	220.0	6.2	908.4
16:20	8.8	92.0	0.0	220.0	6.6	908.5
16:30	8.6	93.0	0.0	220.0	7.2	908.6
16:40	8.5	91.0	0.0	220.0	6.8	908.6
16:50	8.4	93.0	0.0	220.0	6.9	908.7
17:00	8.3	92.0	0.0	220.0	6.7	908.9
17:10	8.2	92.0	0.0	220.0	7.9	908.8
17:20	8.2	91.0	0.0	220.0	8.2	908.9
17:30	8.1	92.0	0.0	220.0	7.9	909.0
17:40	7.9	92.0	0.0	220.0	8.5	909.0
17:50	7.9	92.0	0.0	220.0	8.5	909.1
18:00	7.8	91.0	0.0	220.0	8.2	909.0
18:10	7.7	91.0	0.0	220.0	8.7	909.0
18:20	7.7	92.0	0.0	220.0	8.7	909.1
18:30	7.6	92.0	0.0	220.0	7.8	909.2
18:40	7.5	92.0	0.0	220.0	7.7	909.3
18:50	7.4	93.0	0.0	220.0	6.1	909.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
19:00	7.2	93.0	0.0	230.0	6.3	909.2
19:10	7.1	94.0	0.0	220.0	6.3	909.2
19:20	7.1	93.0	0.0	220.0	7.0	909.2
19:30	7.1	94.0	0.0	220.0	6.5	909.4
19:40	7.0	94.0	0.0	220.0	6.7	909.3
19:50	6.9	94.0	0.0	230.0	6.4	909.4
20:00	6.9	96.0	0.0	230.0	6.9	909.5
20:10	6.8	96.0	0.0	220.0	7.4	909.5
20:20	6.7	97.0	0.0	230.0	6.1	909.6
20:30	6.6	97.0	0.0	220.0	6.5	909.8
20:40	6.6	97.0	0.0	220.0	6.6	909.9
20:50	6.5	97.0	0.0	220.0	6.0	910.0
21:00	6.5	98.0	0.0	230.0	5.4	910.0
21:10	6.5	98.0	0.0	230.0	5.2	910.0
21:20	6.4	98.0	0.0	230.0	5.2	910.0
21:30	6.3	100.0	0.0	230.0	5.4	910.1
21:40	6.3	100.0	0.0	230.0	5.1	910.1
21:50	6.3	100.0	0.0	230.0	4.8	910.2
22:00	6.3	100.0	0.0	230.0	5.4	910.2
22:10	6.3	100.0	0.0	230.0	5.3	910.3
22:20	6.2	100.0	0.0	230.0	4.7	910.4
22:30	6.2	100.0	0.0	240.0	5.2	910.5
22:40	6.2	100.0	0.0	240.0	5.3	910.5
22:50	6.2	100.0	0.0	230.0	5.2	910.5
23:00	6.2	100.0	0.0	230.0	5.5	910.6
23:10	6.3	100.0	0.0	230.0	5.7	910.6
23:20	6.2	100.0	0.0	240.0	5.3	910.7
23:30	6.2	100.0	0.0	240.0	5.1	910.8
23:40	6.3	100.0	0.0	240.0	5.3	910.9
23:50	6.3	100.0	0.0	240.0	5.4	910.9

Table C3: Locally measured meteorological data at the summit station Schmücke on 10 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	6.3	100.0	0.0	240.0	5.2	910.9
0:10	6.3	100.0	0.0	240.0	5.4	911.1
0:20	6.3	100.0	0.0	240.0	5.4	911.1
0:30	6.4	100.0	0.0	240.0	5.6	911.1
0:40	6.5	100.0	0.0	240.0	5.6	911.3
0:50	6.5	100.0	0.0	250.0	5.2	911.3
1:00	6.5	100.0	0.0	250.0	5.5	911.3
1:10	6.5	100.0	0.0	240.0	5.1	911.4
1:20	6.6	100.0	0.0	240.0	5.0	911.4
1:30	6.5	100.0	0.0	250.0	4.7	911.4
1:40	6.6	100.0	0.0	240.0	4.8	911.4
1:50	6.7	100.0	0.0	240.0	4.6	911.6
2:00	6.7	100.0	0.0	240.0	4.1	911.7
2:10	6.6	100.0	0.0	230.0	3.6	911.7
2:20	6.6	100.0	0.0	240.0	4.2	911.6
2:30	6.7	100.0	0.0	240.0	3.9	911.8
2:40	6.7	100.0	0.0	240.0	4.2	911.8
2:50	6.7	100.0	0.0	240.0	4.4	911.9
3:00	6.7	100.0	0.0	240.0	4.0	911.8
3:10	6.7	100.0	0.0	240.0	4.2	912.0
3:20	6.8	100.0	0.0	240.0	4.6	912.0
3:30	6.7	100.0	0.0	240.0	4.7	912.2
3:40	6.7	100.0	0.0	230.0	5.0	912.2
3:50	6.8	100.0	0.0	240.0	4.4	912.2
4:00	6.7	100.0	0.0	240.0	4.4	912.3
4:10	6.7	100.0	0.0	230.0	3.9	912.5
4:20	6.6	100.0	0.0	230.0	3.9	912.7
4:30	6.6	100.0	0.0	240.0	4.0	912.7
4:40	6.6	100.0	0.0	230.0	4.2	912.8
4:50	6.6	100.0	0.0	240.0	4.0	912.8
5:00	6.6	100.0	0.0	240.0	4.5	912.9
5:10	6.6	100.0	0.0	240.0	4.4	913.0
5:20	6.6	100.0	0.0	240.0	4.3	913.1
5:30	6.6	100.0	0.0	240.0	4.6	913.1
5:40	6.5	100.0	0.0	230.0	4.9	913.2
5:50	---	---	---	---	---	---
6:00	---	---	---	---	---	---
6:10	---	---	---	---	---	---
6:20	---	---	---	---	---	---
6:30	6.5	100.0	0.0	230.0	4.4	913.6
6:40	---	---	---	---	---	---
6:50	6.1	100.0	0.0	230.0	4.8	914.0
7:00	6.1	100.0	0.0	230.0	4.0	914.0
7:10	6.1	100.0	0.0	230.0	4.3	914.1
7:20	6.2	100.0	0.0	230.0	4.4	914.3
7:30	6.3	100.0	0.0	230.0	4.6	914.4
7:40	6.4	100.0	0.0	230.0	4.5	914.5
7:50	6.4	100.0	0.0	230.0	5.0	914.5
8:00	6.5	100.0	0.0	230.0	5.2	914.7
8:10	6.6	100.0	0.0	230.0	5.0	914.8
8:20	6.7	100.0	0.0	220.0	5.0	915.0
8:30	6.7	100.0	0.0	220.0	5.0	915.2
8:40	6.8	100.0	0.0	220.0	5.0	915.3
8:50	7.0	100.0	0.0	230.0	4.9	915.4
9:00	7.0	100.0	0.0	230.0	4.8	915.4
9:10	7.1	100.0	0.0	230.0	4.9	915.5
9:20	7.1	100.0	0.0	240.0	5.3	915.6
9:30	7.2	100.0	0.0	230.0	4.9	915.5
9:40	7.3	100.0	0.0	220.0	5.6	915.6
9:50	7.4	100.0	0.0	220.0	5.7	915.7
10:00	7.5	100.0	0.0	220.0	5.5	915.8
10:10	7.7	100.0	0.0	220.0	6.4	915.9
10:20	7.8	100.0	0.0	220.0	5.8	915.8
10:30	8.0	100.0	0.0	230.0	5.0	915.9
10:40	8.1	99.0	0.0	230.0	6.0	916.0
10:50	8.4	100.0	0.0	220.0	6.4	915.8
11:00	8.8	100.0	0.0	210.0	7.3	915.9
11:10	8.8	100.0	0.0	220.0	7.8	916.0
11:20	8.9	99.0	0.0	220.0	7.0	916.0
11:30	9.0	100.0	0.0	220.0	5.6	915.9
11:40	9.2	100.0	0.0	220.0	6.7	915.9
11:50	9.7	100.0	0.0	220.0	7.4	916.0
12:00	9.8	99.0	0.0	220.0	8.3	915.9
12:10	10.2	99.0	0.0	220.0	8.9	915.8
12:20	10.8	87.0	0.0	220.0	9.7	915.8
12:30	10.7	84.0	0.0	220.0	8.9	915.9
12:40	10.5	84.0	0.0	220.0	8.1	916.1
12:50	10.4	84.0	0.0	220.0	7.7	916.0
13:00	10.7	84.0	0.0	210.0	8.2	915.8
13:10	10.9	84.0	0.0	220.0	7.9	915.7
13:20	11.3	80.0	0.0	210.0	9.8	915.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
13:30	11.2	82.0	0.0	210.0	9.2	915.9
13:40	11.1	82.0	0.0	220.0	8.8	915.8
13:50	11.3	81.0	0.0	210.0	9.9	915.7
14:00	11.5	81.0	0.0	220.0	9.3	915.7
14:10	11.2	81.0	0.0	220.0	9.8	915.6
14:20	10.7	83.0	0.0	220.0	8.5	915.7
14:30	10.8	84.0	0.0	220.0	8.0	915.6
14:40	10.8	83.0	0.0	220.0	9.4	915.7
14:50	10.4	85.0	0.0	220.0	8.4	915.9
15:00	10.4	83.0	0.0	220.0	8.0	916.0
15:10	10.3	82.0	0.0	230.0	6.2	915.9
15:20	9.9	84.0	0.0	230.0	5.7	915.7
15:30	9.8	84.0	0.0	220.0	6.5	915.8
15:40	9.4	86.0	0.0	230.0	6.0	915.9
15:50	9.2	87.0	0.0	230.0	6.7	915.9
16:00	9.1	88.0	0.0	230.0	7.4	916.0
16:10	9.1	88.0	0.0	230.0	7.3	916.0
16:20	9.0	90.0	0.0	230.0	7.5	916.1
16:30	8.8	90.0	0.0	230.0	7.5	916.2
16:40	8.7	91.0	0.0	230.0	6.8	916.4
16:50	8.5	91.0	0.0	230.0	6.4	916.6
17:00	8.4	93.0	0.0	230.0	6.6	916.6
17:10	8.3	94.0	0.0	220.0	6.4	916.6
17:20	8.3	94.0	0.0	230.0	6.5	916.7
17:30	8.4	95.0	0.0	220.0	8.2	916.7
17:40	8.2	95.0	0.0	220.0	7.8	916.7
17:50	8.1	96.0	0.0	230.0	6.9	916.8
18:00	8.1	97.0	0.0	230.0	7.0	916.9
18:10	8.2	97.0	0.0	230.0	6.4	917.2
18:20	8.3	97.0	0.0	230.0	6.0	917.3
18:30	8.3	97.0	0.0	230.0	6.4	917.4
18:40	8.4	97.0	0.0	220.0	6.7	917.3
18:50	8.4	98.0	0.0	220.0	7.6	917.3
19:00	8.4	98.0	0.0	230.0	7.9	917.2
19:10	8.4	99.0	0.0	220.0	9.0	916.9
19:20	8.4	100.0	0.0	220.0	10.6	916.8
19:30	8.4	100.0	0.0	230.0	10.4	916.8
19:40	8.3	100.0	0.0	230.0	9.4	917.2
19:50	8.3	100.0	0.0	230.0	8.2	917.4
20:00	8.1	99.0	0.0	230.0	8.0	917.3
20:10	8.0	100.0	0.0	230.0	8.2	917.3
20:20	8.0	100.0	0.0	230.0	7.8	917.5
20:30	8.0	100.0	0.0	230.0	8.2	917.7
20:40	8.0	100.0	0.0	230.0	6.8	917.7
20:50	8.0	100.0	0.0	230.0	6.9	917.6
21:00	7.9	100.0	0.0	230.0	7.1	917.7
21:10	7.9	100.0	0.0	230.0	6.9	917.7
21:20	7.8	100.0	0.0	230.0	6.7	917.6
21:30	7.8	100.0	0.0	230.0	6.9	917.6
21:40	7.8	100.0	0.0	230.0	7.5	917.6
21:50	7.7	100.0	0.0	230.0	7.7	917.4
22:00	7.6	100.0	0.0	230.0	8.2	917.4
22:10	7.5	100.0	0.0	230.0	8.3	917.4
22:20	7.4	99.0	0.0	230.0	7.8	917.4
22:30	7.4	99.0	0.0	240.0	8.0	917.5
22:40	7.4	99.0	0.0	240.0	8.3	917.5
22:50	7.4	99.0	0.0	240.0	8.0	917.6
23:00	7.4	99.0	0.0	240.0	7.5	917.5
23:10	7.4	99.0	0.0	240.0	7.7	917.3
23:20	7.4	99.0	0.0	240.0	8.3	917.3
23:30	7.4	99.0	0.0	240.0	8.2	916.9
23:40	7.4	99.0	0.0	230.0	8.4	917.0
23:50	7.4	99.0	0.0	230.0	9.1	917.2

D: The cloud event 11-10-2001

On 11 October the measurement site came under the influence of a high pressure area centred over central France, which blocked frontal disturbances and pushed them northwards. Thus, just the north of Germany was affected by an occluded front of a low-pressure area embedded in the frontal system of a low north of Iceland and associated precipitations. Between the high pressure area and low pressure in the North an intensive predominantly westerly flow was established. The wind direction at the summit was between 230° and 240° . The satellite pictures are difficult to interpret. They show large-scale cloudiness with a distinct dissolution downwind of the Thüringer Wald. As a consequence of frontal processes over the North Atlantic the backward trajectories run stably just for the last 36 hours and Atlantic air masses were transported via North France to the experimental site. The south-westerly flow and the orographic character of the clouds conformed well to the required meteorological conditions.

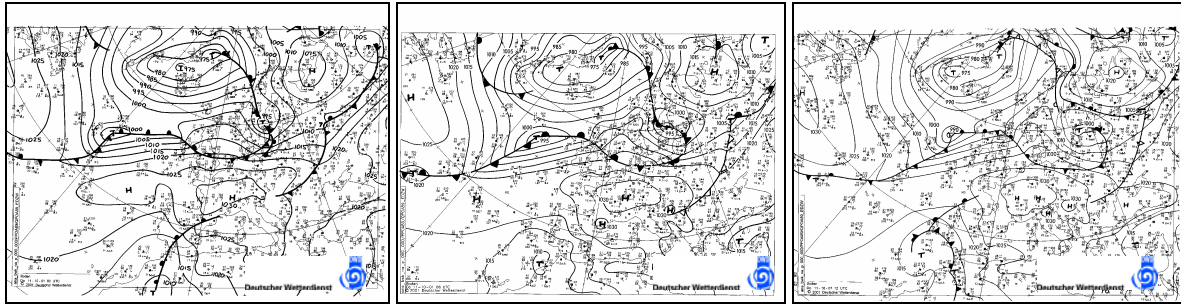


Fig. D1: Surface weather charts on 11 October 2001, 00, 06, and 12 UTC (source: DWD).

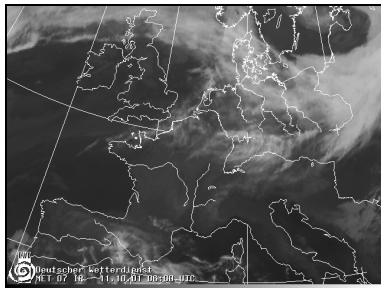


Fig. D2: IR-satellite picture on 11 October 2001, 06 UTC (source: DWD).

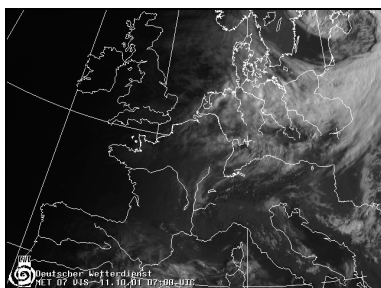


Fig. D3: VIS-satellite picture on 11 October 2001, 07 UTC (source: DWD).

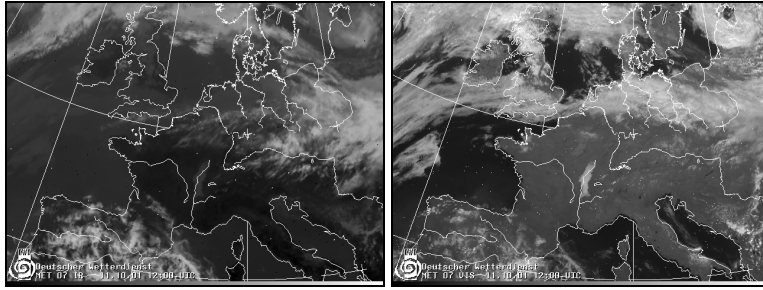


Fig. D4: IR and VIS-satellite pictures on 11 October 2001, 12 UTC (source: DWD).

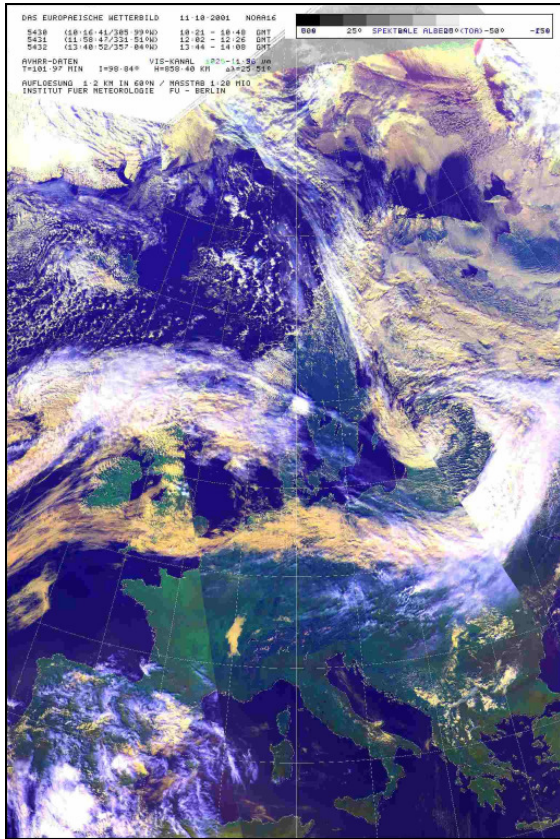


Fig. D5: NOAA satellite picture on 11 October 2001 (source: Berliner Wetterkarte, 2001).

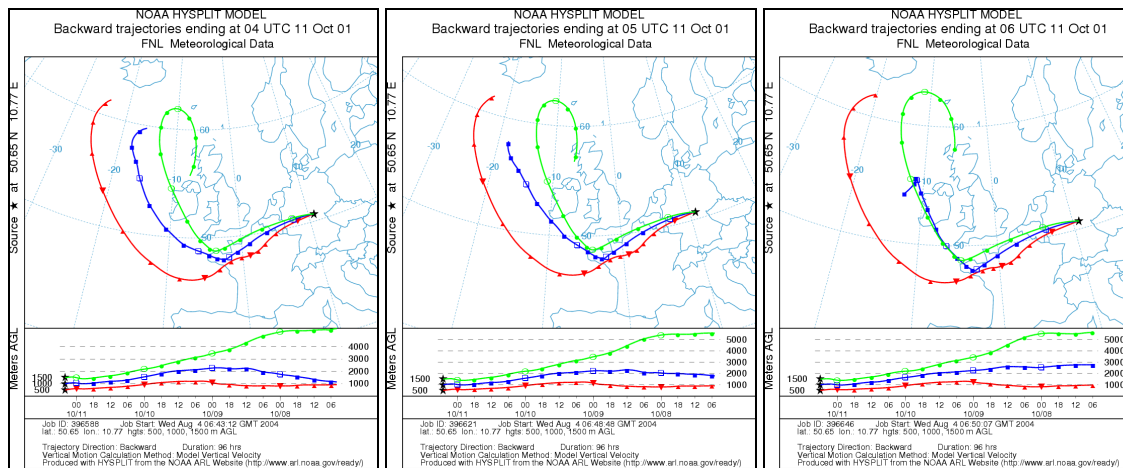


Fig. D6: Backward trajectories on 11 October 2001, 04, 05, and 06 UTC (source: NOAA ARL Website).

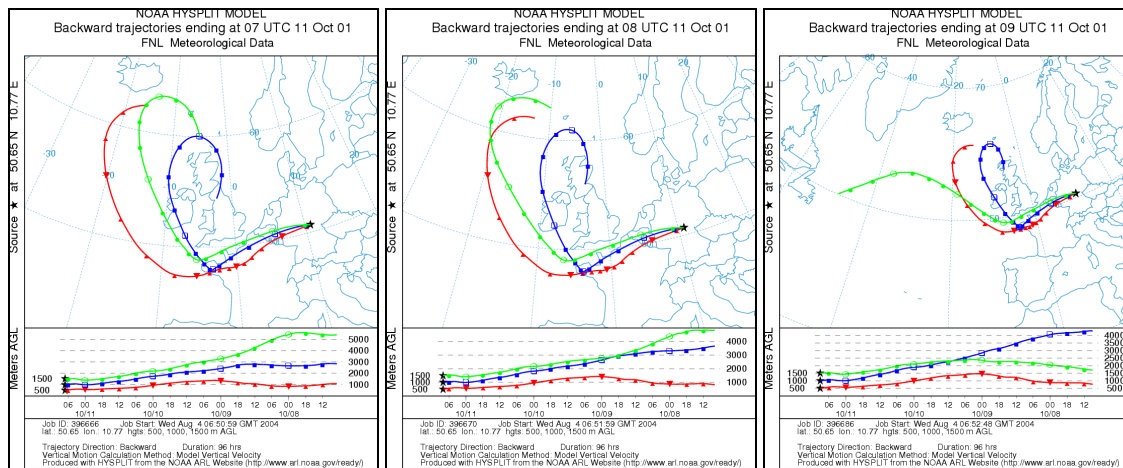


Fig. D7: Backward trajectories on 11 October 2001, 07, 08, and 09 UTC (source: NOAA ARL Website).

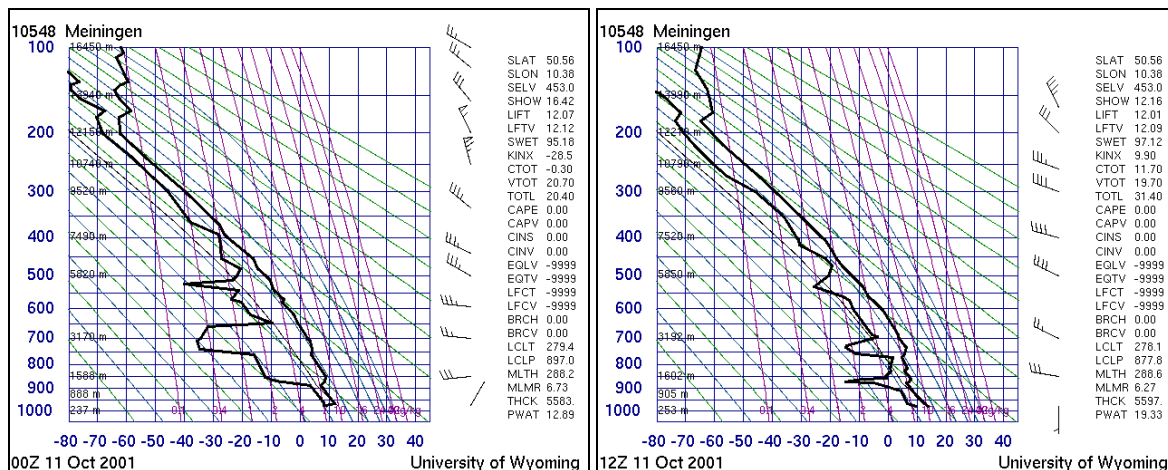


Fig. D8: Vertical rawinsonde profiles of temperature and dew-point temperature on 11 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table D1: Locally measured meteorological data at the summit station Schmücke on 11 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	7.4	99.0	0.0	240.0	8.9	917.3
0:10	7.4	99.0	0.0	230.0	9.1	917.2
0:20	7.4	99.0	0.0	230.0	9.0	917.6
0:30	7.4	99.0	0.0	240.0	8.7	917.7
0:40	7.4	99.0	0.0	240.0	7.9	917.8
0:50	7.4	99.0	0.0	240.0	8.2	917.6
1:00	7.3	100.0	0.0	250.0	8.2	917.6
1:10	7.3	100.0	0.0	250.0	8.7	917.6
1:20	7.3	100.0	0.0	250.0	8.3	917.4
1:30	7.3	100.0	0.0	250.0	8.5	917.6
1:40	7.3	100.0	0.0	250.0	9.3	917.6
1:50	7.3	100.0	0.0	240.0	8.9	917.5
2:00	7.3	100.0	0.0	240.0	8.9	917.5
2:10	7.2	100.0	0.0	240.0	9.5	917.3
2:20	7.2	100.0	0.0	240.0	10.2	917.1
2:30	7.1	100.0	0.0	240.0	9.2	917.2
2:40	7.1	100.0	0.0	240.0	9.3	917.1
2:50	7.0	100.0	0.0	240.0	8.0	917.1
3:00	7.0	100.0	0.0	230.0	7.5	917.3
3:10	7.0	100.0	0.0	240.0	7.6	917.6
3:20	7.0	100.0	0.0	240.0	7.2	917.7
3:30	7.0	100.0	0.0	240.0	6.6	917.7
3:40	7.0	100.0	0.0	240.0	6.7	917.8
3:50	7.0	100.0	0.0	240.0	6.6	917.9
4:00	7.0	100.0	0.0	230.0	6.9	917.8
4:10	6.9	100.0	0.0	240.0	7.2	917.9
4:20	6.9	100.0	0.0	240.0	6.8	918.0
4:30	6.9	100.0	0.0	230.0	7.9	917.8
4:40	6.9	100.0	0.0	230.0	7.6	917.9
4:50	6.9	100.0	0.0	230.0	7.0	918.0
5:00	6.9	100.0	0.0	230.0	7.4	918.0
5:10	6.9	100.0	0.0	230.0	7.4	917.9
5:20	6.8	100.0	0.0	230.0	7.0	918.0
5:30	6.9	100.0	0.0	240.0	6.6	918.3
5:40	6.9	100.0	0.0	240.0	6.7	918.3
5:50	---	---	---	---	---	---
6:00	---	---	---	---	---	---
6:10	---	---	---	---	---	---
6:20	---	---	---	---	---	---
6:30	---	---	---	---	---	---
6:40	---	---	---	---	---	---
6:50	---	---	---	---	---	---
7:00	---	---	---	---	---	---
7:10	---	---	---	---	---	---
7:20	---	---	---	---	---	---
7:30	---	---	---	---	---	---
7:40	7.2	100.0	0.0	240.0	8.1	918.9
7:50	7.3	100.0	0.0	240.0	7.9	919.1
8:00	7.3	100.0	0.0	230.0	7.8	919.1
8:10	7.4	100.0	0.0	230.0	7.3	919.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
8:20	7.5	100.0	0.0	230.0	7.1	919.3
8:30	7.5	100.0	0.0	240.0	7.6	919.4
8:40	7.6	100.0	0.0	230.0	7.2	919.3
8:50	7.5	100.0	0.0	220.0	7.6	919.5
9:00	7.6	100.0	0.0	220.0	7.0	919.5
9:10	7.5	100.0	0.0	220.0	7.9	919.6
9:20	7.7	100.0	0.0	230.0	6.8	919.6
9:30	7.7	100.0	0.0	220.0	6.6	919.5
9:40	7.9	100.0	0.0	220.0	6.1	919.6
9:50	8.0	100.0	0.0	230.0	5.8	919.8
10:00	8.4	100.0	0.0	240.0	5.5	919.6
10:10	9.0	100.0	0.0	230.0	6.7	919.7
10:20	9.2	100.0	0.0	220.0	6.3	919.7
10:30	9.2	100.0	0.0	220.0	7.9	919.6
10:40	9.8	100.0	0.0	220.0	9.8	919.6
10:50	10.1	100.0	0.0	220.0	9.6	919.6
11:00	10.4	99.0	0.0	220.0	9.1	919.5
11:10	10.4	98.0	0.0	220.0	10.3	919.5
11:20	10.7	87.0	0.0	220.0	10.3	919.5
11:30	10.5	86.0	0.0	220.0	9.8	919.3
11:40	10.7	84.0	0.0	220.0	10.6	919.1
11:50	10.7	84.0	0.0	220.0	10.2	919.1
12:00	10.7	84.0	0.0	210.0	9.5	919.3
12:10	11.1	83.0	0.0	210.0	9.1	919.4
12:20	11.3	84.0	0.0	220.0	8.8	919.5
12:30	11.2	84.0	0.0	220.0	9.4	919.4
12:40	11.1	85.0	0.0	220.0	8.5	919.3
12:50	11.1	85.0	0.0	220.0	8.8	919.2
13:00	11.3	84.0	0.0	220.0	10.0	919.2
13:10	11.7	82.0	0.0	230.0	9.3	919.3
13:20	11.6	82.0	0.0	220.0	8.1	919.5
13:30	11.9	80.0	0.0	220.0	8.4	919.4
13:40	11.7	80.0	0.0	220.0	8.2	919.3
13:50	11.6	81.0	0.0	220.0	8.2	919.4
14:00	11.9	78.0	0.0	220.0	7.6	919.6
14:10	11.9	78.0	0.0	220.0	7.4	919.6
14:20	11.9	78.0	0.0	220.0	7.6	919.6
14:30	11.5	79.0	0.0	220.0	7.9	919.8
14:40	11.5	78.0	0.0	210.0	7.2	919.9
14:50	11.4	79.0	0.0	220.0	7.9	919.8
15:00	11.1	79.0	0.0	220.0	7.5	919.8
15:10	10.9	80.0	0.0	220.0	5.9	920.0
15:20	10.8	81.0	0.0	220.0	4.9	920.2
15:30	10.7	81.0	0.0	220.0	4.1	920.2
15:40	10.3	84.0	0.0	240.0	3.7	920.1
15:50	10.0	86.0	0.0	240.0	4.2	920.1
16:00	9.7	87.0	0.0	250.0	4.3	920.2
16:10	9.5	88.0	0.0	250.0	3.6	920.4
16:20	9.3	91.0	0.0	250.0	2.8	920.4
16:30	9.1	91.0	0.0	260.0	4.3	920.3
16:40	9.1	93.0	0.0	260.0	4.3	920.2
16:50	9.0	94.0	0.0	250.0	4.6	920.2
17:00	8.8	94.0	0.0	250.0	4.8	920.1
17:10	8.7	95.0	0.0	240.0	4.7	920.1
17:20	8.6	95.0	0.0	240.0	4.2	920.3
17:30	8.6	96.0	0.0	240.0	4.5	920.2
17:40	8.4	97.0	0.0	240.0	4.7	920.1
17:50	8.4	97.0	0.0	240.0	5.4	920.2
18:00	8.3	96.0	0.0	240.0	5.0	920.2
18:10	8.3	96.0	0.0	230.0	5.7	920.1
18:20	8.2	96.0	0.0	240.0	5.4	920.2
18:30	8.3	95.0	0.0	240.0	4.3	920.4
18:40	8.2	95.0	0.0	240.0	4.8	920.4
18:50	8.2	94.0	0.0	230.0	4.8	920.4
19:00	8.4	94.0	0.0	230.0	4.2	920.4
19:10	8.2	94.0	0.0	240.0	2.8	920.5
19:20	8.0	94.0	0.0	250.0	4.0	920.5
19:30	8.1	94.0	0.0	240.0	5.2	920.5
19:40	8.2	94.0	0.0	240.0	5.1	920.4
19:50	8.1	94.0	0.0	230.0	5.1	920.5
20:00	8.1	94.0	0.0	230.0	5.1	920.6
20:10	8.0	95.0	0.0	230.0	5.2	920.5
20:20	8.2	96.0	0.0	240.0	5.1	920.6
20:30	8.2	96.0	0.0	240.0	5.0	920.7
20:40	8.3	95.0	0.0	240.0	4.6	920.8
20:50	8.3	94.0	0.0	230.0	4.6	920.8
21:00	8.1	94.0	0.0	230.0	3.6	920.9
21:10	8.0	95.0	0.0	230.0	3.3	920.9
21:20	8.1	95.0	0.0	230.0	3.0	920.9
21:30	7.9	96.0	0.0	240.0	3.5	920.9
21:40	8.0	96.0	0.0	240.0	4.0	920.9
21:50	8.0	97.0	0.0	240.0	3.6	920.9
22:00	8.0	97.0	0.0	230.0	2.9	921.0
22:10	7.9	97.0	0.0	230.0	2.5	920.9
22:20	7.8	97.0	0.0	230.0	1.8	920.9
22:30	7.7	97.0	0.0	230.0	1.9	920.9
22:40	7.5	97.0	0.0	230.0	2.2	920.8
22:50	7.4	97.0	0.0	230.0	2.7	920.8
23:00	7.4	99.0	0.0	230.0	2.5	920.8
23:10	7.5	99.0	0.0	230.0	2.5	920.8
23:20	7.5	99.0	0.0	230.0	1.9	920.9
23:30	7.4	99.0	0.0	240.0	2.1	920.8
23:40	7.6	100.0	0.0	250.0	2.3	920.7
23:50	7.5	100.0	0.0	240.0	2.5	920.8

E: The cloud event 21/22-10-2001

This cloud event consisted of four parts. A residual low over the North Sea and its occlusion was decisive for the weather, bringing moist and cloudy air to Germany. Due to the beginning precipitation the measurements had to be discontinued repeatedly during the 21 October. The analysis of the backward trajectories shows very different origins of the advected air masses during the two days. On 21 October the trajectories show an air mass transport from Mediterranean Sea and on 22 October air masses were originated over the Mid-Atlantic and came via Azores, Iberian Peninsula and France to the experimental site. The measured wind directions on the summit were unstable over the whole period, too. Therefore, the different incoming air masses were not comparable. The unstable flow conditions and the precipitation are totally inconsistent with the experimental design, so that it should not be used for any further analysis.

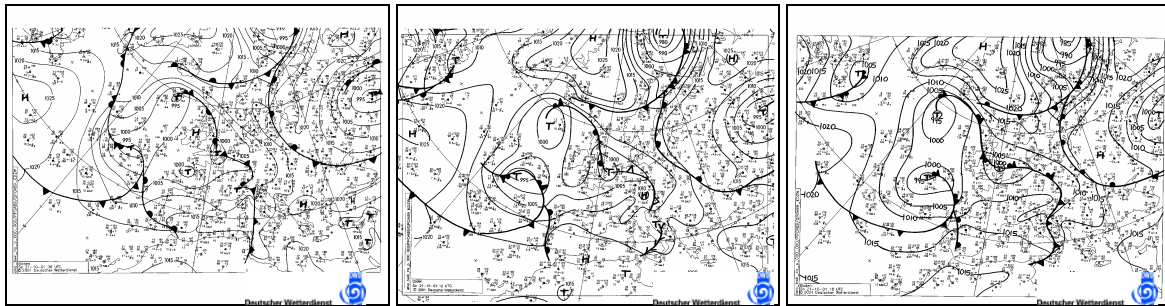


Fig. E1: Surface weather charts on 21 October 2001, 06, 12, and 18 UTC (source: DWD).

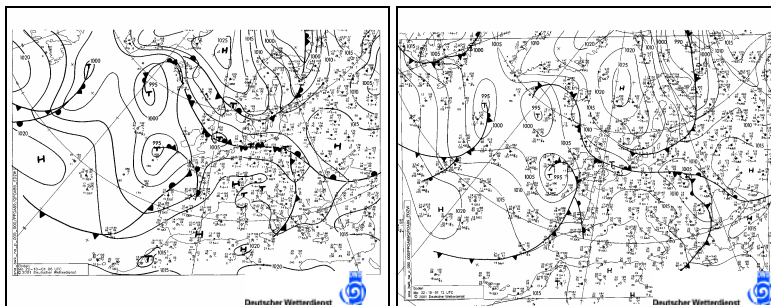


Fig. E2: Surface weather charts on 22 October 2001, 06 and 12 UTC (source: DWD).

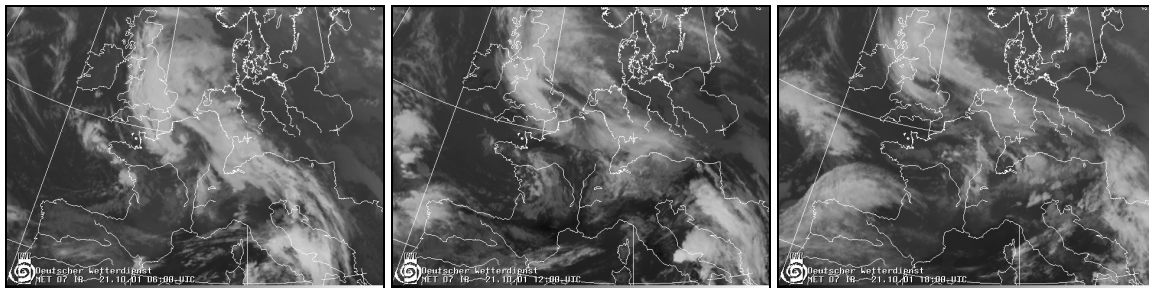


Fig. E3: IR-satellite pictures on 21 October 2001, 06, 12 and 18 UTC (source: DWD).

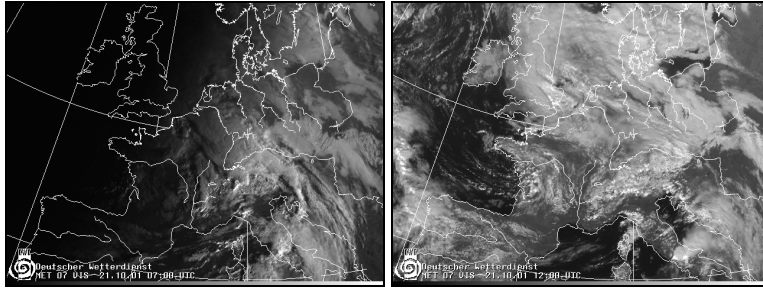


Fig. E4: VIS-satellite pictures on 21 October 2001, 07 and 12 UTC (source: DWD).

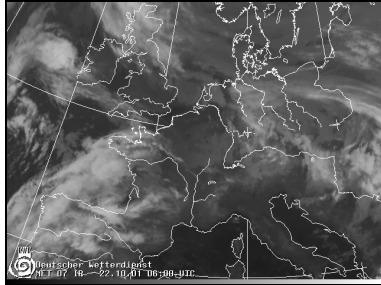


Fig. E5: IR-satellite picture on 22 October 2001, 06 UTC (source: DWD).

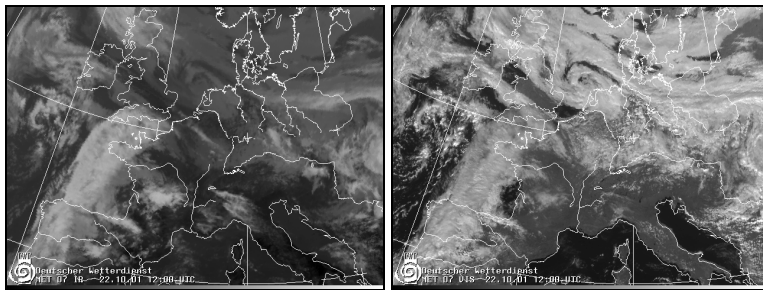


Fig. E6: IR and VIS-satellite pictures on 22 October 2001, 12 UTC (source: DWD).

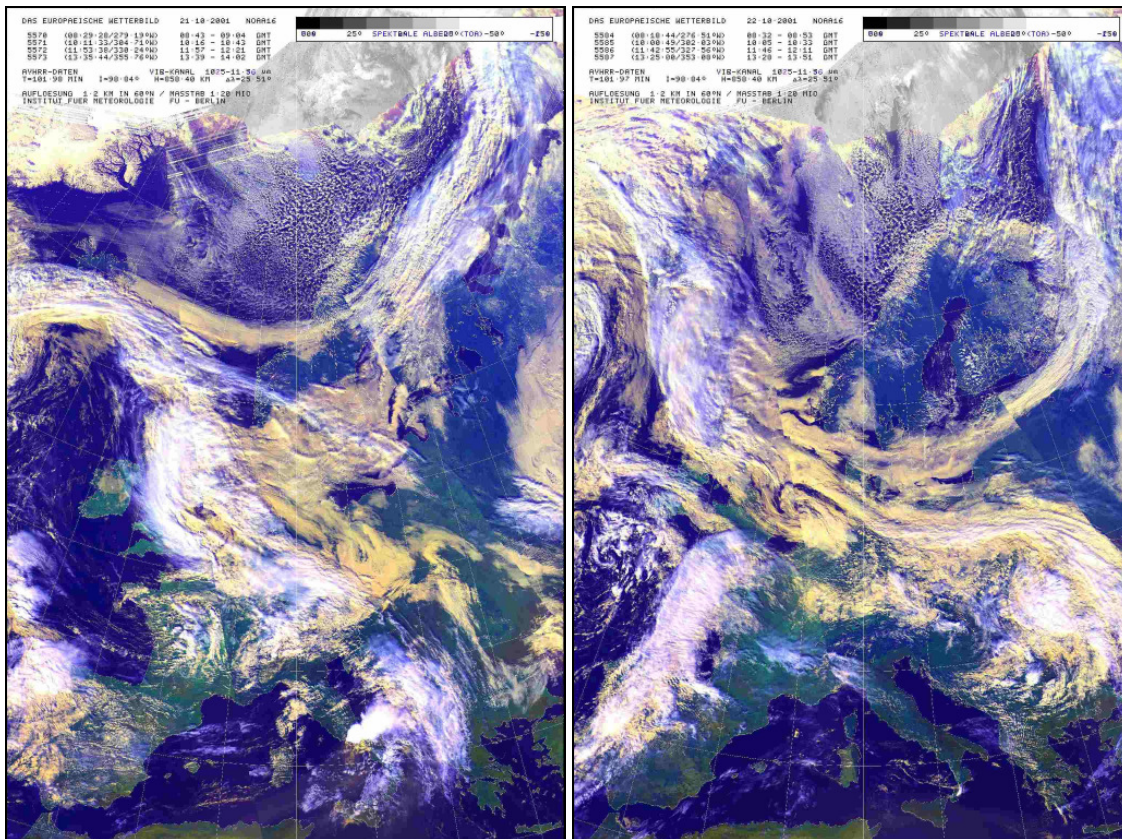


Fig. E7: NOAA satellite pictures on 21 and 22 October 2001 (source: Berliner Wetterkarte, 2001).

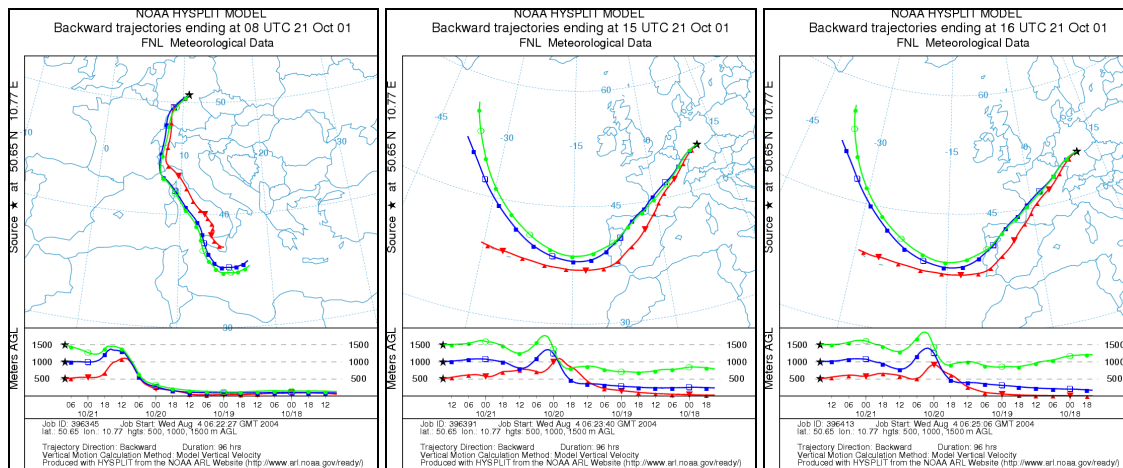


Fig. E8: Backward trajectories on 21 October 2001, 08, 15, and 16 UTC (source: NOAA ARL Website).

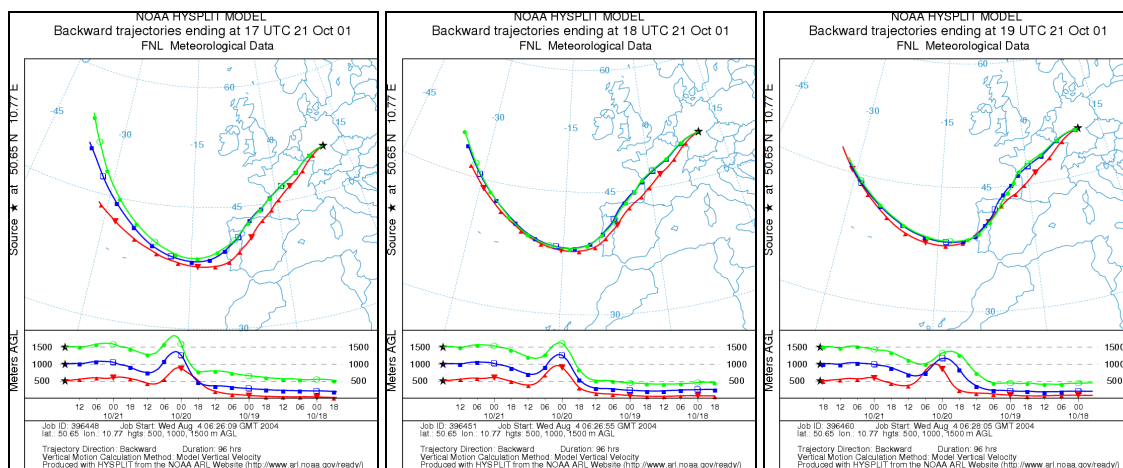


Fig. E9: Backward trajectories on 21 October 2001, 17, 18, and 19 UTC (source: NOAA ARL Website).

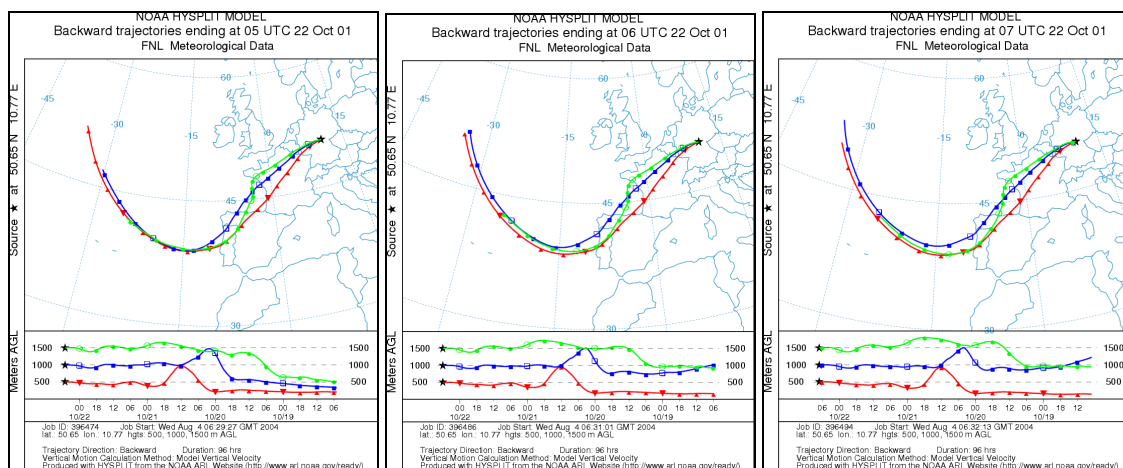


Fig. E10: Backward trajectories on 22 October 2001, 05, 06, and 07 UTC (source: NOAA ARL Website).

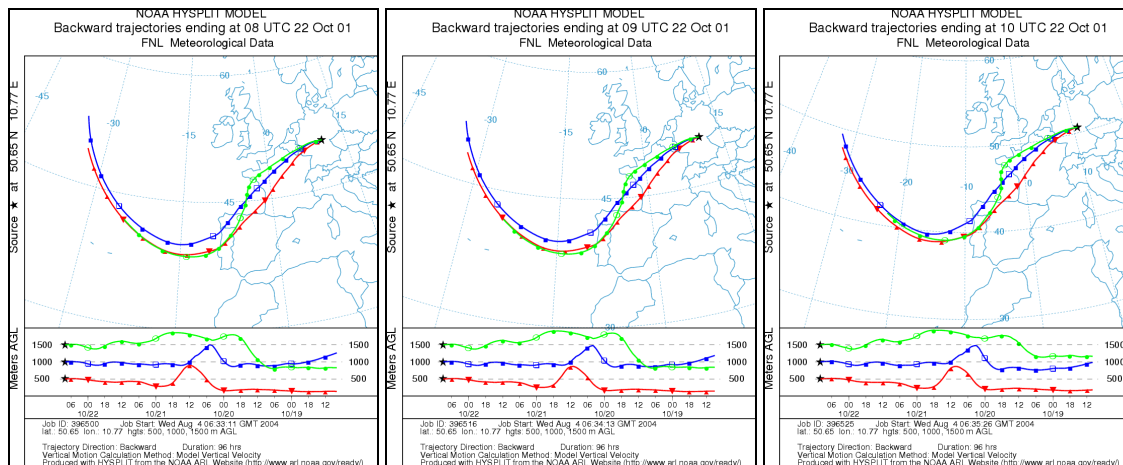


Fig. E11: Backward trajectories on 22 October 2001, 08, 09, and 10 UTC (source: NOAA ARL Website).

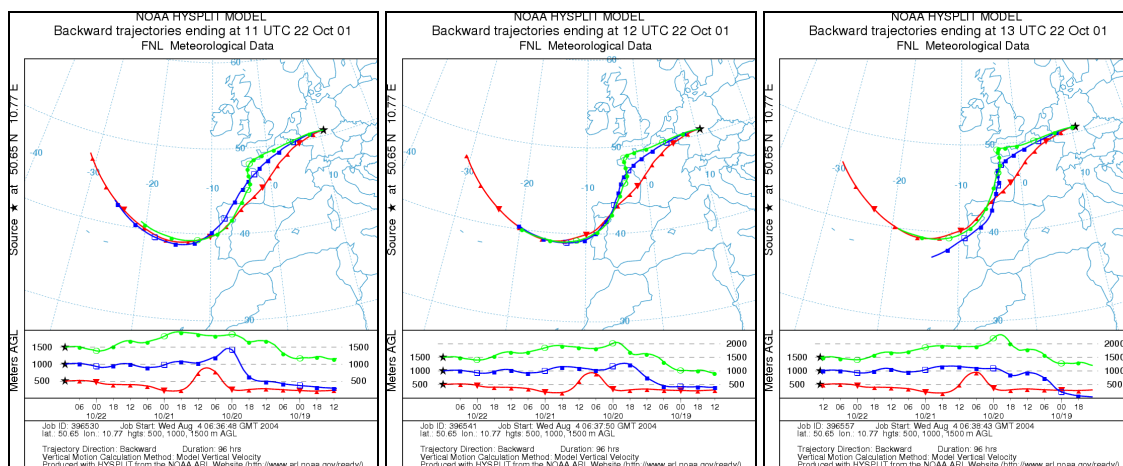


Fig. E12: Backward trajectories on 22 October 2001, 11, 12, and 13 UTC (source: NOAA ARL Website).

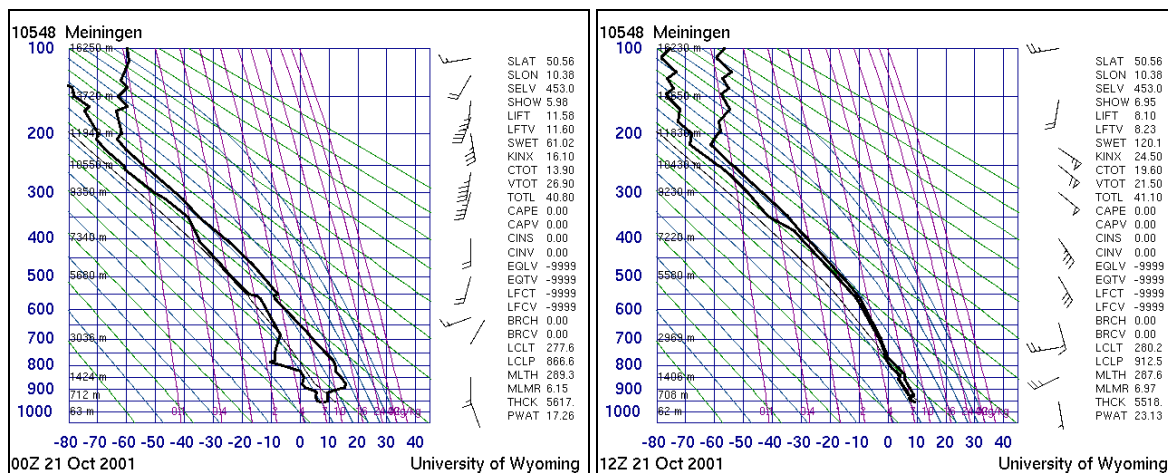


Fig. E13: Vertical rawinsonde profiles of temperature and dew-point temperature on 21 October 2001, 00 and 12 UTC (source: University of Wyoming).

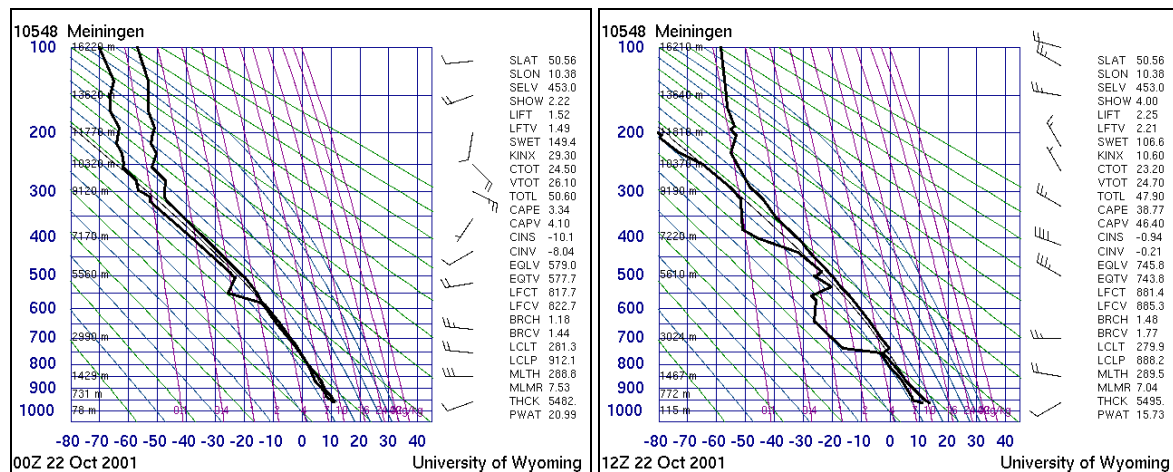


Fig. E14: Vertical rawinsonde profiles of temperature and dew-point temperature on 22 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table E1: Locally measured meteorological data at the summit station Schmücke on 21 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	10.4	72.0	0.0	230.0	2.6	898.9
0:10	10.1	75.0	0.0	220.0	3.2	898.9
0:20	10.0	75.0	0.0	210.0	3.6	899.0
0:30	9.8	76.0	0.0	210.0	3.2	898.8
0:40	9.9	76.0	0.0	210.0	3.3	898.7
0:50	9.8	76.0	0.0	210.0	2.8	898.6
1:00	9.8	75.0	0.0	200.0	2.8	898.7
1:10	9.9	75.0	0.0	200.0	3.6	898.6
1:20	9.8	75.0	0.0	200.0	4.1	898.6
1:30	9.5	76.0	0.0	200.0	4.5	898.5
1:40	9.3	77.0	0.0	200.0	3.9	898.4
1:50	9.1	78.0	0.0	200.0	3.5	898.2
2:00	8.9	78.0	0.0	200.0	3.5	898.3
2:10	8.8	78.0	0.0	210.0	4.2	898.0
2:20	8.8	78.0	0.0	210.0	3.1	897.8
2:30	8.8	78.0	0.0	220.0	2.8	897.6
2:40	8.7	79.0	0.0	210.0	2.8	897.6
2:50	8.7	79.0	0.0	220.0	2.9	897.5
3:00	8.6	79.0	0.0	220.0	3.3	897.3
3:10	8.7	79.0	0.0	210.0	4.4	897.3
3:20	8.6	81.0	0.0	200.0	5.0	897.5
3:30	8.8	79.0	0.0	210.0	5.6	897.5
3:40	8.3	81.0	0.0	210.0	6.7	897.6
3:50	7.8	83.0	0.0	210.0	6.9	897.6
4:00	7.4	85.0	0.0	210.0	7.8	897.5
4:10	6.7	90.0	0.0	220.0	7.0	897.5
4:20	6.4	92.0	0.0	220.0	6.9	897.3
4:30	6.4	94.0	0.0	210.0	7.0	897.3
4:40	6.4	94.0	0.0	210.0	7.7	897.4
4:50	6.4	97.0	0.0	220.0	8.3	897.3
5:00	6.4	97.0	0.0	220.0	8.6	897.3
5:10	6.3	97.0	0.0	220.0	8.6	897.3
5:20	6.2	97.0	0.0	220.0	8.3	897.1
5:30	6.0	98.0	0.0	220.0	7.6	896.8
5:40	6.0	98.0	0.0	230.0	7.4	896.9
5:50	5.9	100.0	0.0	230.0	7.4	896.9
6:00	5.9	100.0	0.0	220.0	6.7	897.0
6:10	5.9	100.0	0.0	230.0	6.7	897.1
6:20	6.0	100.0	0.0	230.0	6.6	897.2
6:30	6.2	98.0	0.0	230.0	6.6	897.3
6:40	6.4	100.0	0.0	230.0	6.8	897.4
6:50	6.5	98.0	0.0	230.0	6.7	897.5
7:00	6.6	98.0	0.0	230.0	6.7	897.8
7:10	6.8	98.0	0.0	240.0	6.1	897.7
7:20	6.9	98.0	0.0	240.0	6.5	897.8
7:30	6.6	98.0	0.0	230.0	7.1	897.9
7:40	6.5	98.0	0.0	230.0	7.5	898.0
7:50	6.3	100.0	0.0	230.0	7.6	897.9
8:00	6.4	100.0	0.0	240.0	7.6	897.9
8:10	6.8	98.0	0.0	240.0	7.1	897.9
8:20	6.5	98.0	0.0	230.0	6.3	898.1
8:30	6.3	100.0	0.0	230.0	6.1	898.1
8:40	6.6	98.0	0.8	240.0	6.9	898.0
8:50	6.8	98.0	0.9	240.0	5.9	898.0
9:00	7.1	100.0	0.9	240.0	6.2	897.7
9:10	7.2	100.0	0.7	240.0	6.4	897.9
9:20	7.1	98.0	1.0	240.0	6.4	897.9
9:30	6.9	98.0	0.9	230.0	5.8	898.1
9:40	6.8	98.0	0.5	240.0	6.3	898.1
9:50	6.8	98.0	0.5	240.0	6.2	898.2
10:00	6.8	98.0	0.9	240.0	6.4	898.2
10:10	6.8	98.0	1.0	240.0	6.2	898.3
10:20	7.0	100.0	1.0	240.0	6.9	898.2
10:30	7.1	98.0	0.5	250.0	7.0	898.2
10:40	7.2	100.0	0.2	240.0	6.6	898.3
10:50	7.2	100.0	0.0	230.0	6.5	898.3
11:00	7.1	98.0	0.1	230.0	7.2	898.3
11:10	7.1	98.0	0.7	240.0	6.9	898.2
11:20	7.1	100.0	0.5	230.0	7.0	898.3
11:30	7.2	100.0	0.7	230.0	6.7	898.2
11:40	7.2	98.0	1.0	230.0	6.9	898.3
11:50	7.3	100.0	0.9	230.0	6.1	898.3
12:00	7.3	100.0	0.9	230.0	6.7	898.4
12:10	7.3	100.0	1.0	220.0	6.5	898.4
12:20	7.2	98.0	0.7	220.0	7.7	898.3
12:30	7.2	98.0	0.3	220.0	6.9	898.3
12:40	7.2	98.0	0.3	220.0	7.2	898.2
12:50	7.2	98.0	0.2	220.0	7.4	898.2
13:00	7.2	98.0	0.1	220.0	8.0	898.2
13:10	7.2	98.0	0.1	220.0	8.2	898.1
13:20	7.3	100.0	0.0	220.0	8.8	898.1

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
13:30	7.3	100.0	0.0	220.0	8.3	898.2
13:40	7.3	100.0	0.0	210.0	8.2	898.2
13:50	7.2	98.0	0.0	210.0	8.8	898.4
14:00	7.1	98.0	0.0	210.0	8.6	898.5
14:10	7.1	98.0	0.0	210.0	9.2	898.6
14:20	7.1	98.0	0.0	210.0	8.5	898.6
14:30	7.1	98.0	0.0	210.0	8.6	898.5
14:40	7.2	98.0	0.0	220.0	8.4	898.6
14:50	7.2	98.0	0.0	220.0	8.6	898.6
15:00	7.2	98.0	0.0	220.0	8.4	898.5
15:10	7.2	98.0	0.0	220.0	8.6	898.5
15:20	7.2	98.0	0.0	220.0	8.8	898.4
15:30	7.3	100.0	0.0	220.0	8.9	898.5
15:40	7.4	99.0	0.0	220.0	8.8	898.6
15:50	7.5	100.0	0.0	220.0	9.2	898.5
16:00	7.5	100.0	0.0	220.0	9.0	898.7
16:10	7.5	100.0	0.0	220.0	8.9	898.7
16:20	7.5	100.0	0.5	220.0	9.2	898.8
16:30	7.4	99.0	0.7	220.0	8.9	898.7
16:40	7.5	100.0	0.2	220.0	8.3	898.7
16:50	7.6	100.0	0.2	220.0	8.1	898.8
17:00	7.6	100.0	0.0	220.0	9.0	898.9
17:10	7.7	100.0	0.1	220.0	8.2	898.9
17:20	7.7	100.0	0.0	220.0	7.5	898.9
17:30	7.7	100.0	0.0	220.0	7.4	899.0
17:40	7.7	100.0	0.0	230.0	8.0	899.0
17:50	7.7	100.0	0.0	220.0	7.7	898.9
18:00	7.8	100.0	0.0	220.0	7.2	899.0
18:10	7.8	100.0	0.1	220.0	7.3	899.1
18:20	7.8	100.0	0.0	220.0	7.0	899.1
18:30	7.7	100.0	0.0	230.0	6.9	899.1
18:40	7.7	100.0	0.6	220.0	8.0	899.1
18:50	7.7	100.0	0.7	220.0	7.8	899.1
19:00	7.7	100.0	2.4	220.0	7.6	899.2
19:10	7.7	100.0	0.8	220.0	7.0	899.3
19:20	7.6	100.0	1.3	230.0	5.8	899.3
19:30	7.6	100.0	1.0	230.0	5.6	899.5
19:40	7.6	100.0	3.1	240.0	4.8	899.5
19:50	7.6	100.0	7.9	230.0	4.8	899.7
20:00	7.6	100.0	1.9	250.0	5.4	899.7
20:10	7.6	100.0	0.3	240.0	5.3	899.9
20:20	7.6	100.0	0.2	230.0	4.6	900.1
20:30	7.6	100.0	0.1	230.0	5.7	900.1
20:40	7.6	100.0	0.1	230.0	5.5	900.2
20:50	7.6	100.0	0.0	230.0	4.4	900.3
21:00	7.7	100.0	0.0	230.0	4.8	900.4
21:10	7.7	100.0	2.6	220.0	4.4	900.4
21:20	7.7	100.0	2.0	230.0	4.8	900.4
21:30	7.7	100.0	3.0	220.0	5.5	900.4
21:40	7.7	100.0	4.6	220.0	5.0	900.4
21:50	7.7	100.0	1.4	220.0	5.3	900.5
22:00	7.7	100.0	0.8	220.0	5.2	900.6
22:10	7.7	100.0	1.3	230.0	5.1	900.6
22:20	7.7	100.0	0.8	230.0	5.2	900.6
22:30	7.7	100.0	0.9	230.0	4.9	900.7
22:40	7.8	100.0	0.5	240.0	4.7	900.9
22:50	7.8	100.0	0.6	230.0	4.2	900.9
23:00	7.7	100.0	3.8	230.0	4.4	900.9
23:10	7.7	100.0	3.7	240.0	4.8	901.0
23:20	7.7	100.0	7.9	240.0	5.0	901.0
23:30	7.7	100.0	5.0	240.0	5.6	901.1
23:40	7.7	100.0	1.6	240.0	5.3	901.2
23:50	7.7	100.0	0.6	250.0	4.6	901.2

Table E2: Locally measured meteorological data at the summit station Schmücke on 22 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	7.7	100.0	0.2	240.0	5.2	901.3
0:10	7.7	100.0	0.1	240.0	4.8	901.4
0:20	7.7	100.0	0.1	240.0	4.9	901.4
0:30	7.7	100.0	0.9	240.0	4.8	901.4
0:40	7.7	100.0	0.7	230.0	4.9	901.5
0:50	7.6	100.0	0.2	220.0	6.4	901.5
1:00	7.6	100.0	0.1	230.0	6.2	901.5
1:10	7.6	100.0	0.7	240.0	5.1	901.6
1:20	7.6	100.0	1.4	230.0	5.0	901.6
1:30	7.6	100.0	1.4	230.0	5.3	901.6
1:40	7.6	100.0	1.3	230.0	5.7	901.6
1:50	7.6	100.0	0.7	230.0	6.1	901.6
2:00	7.6	100.0	0.5	230.0	6.0	901.5
2:10	7.6	100.0	0.9	230.0	5.8	901.5
2:20	7.6	100.0	0.9	230.0	5.5	901.6
2:30	7.6	100.0	0.3	230.0	5.3	901.6
2:40	7.6	100.0	0.1	230.0	5.8	901.5
2:50	7.6	100.0	0.0	230.0	6.0	901.5
3:00	7.6	100.0	0.0	220.0	6.1	901.6
3:10	7.6	100.0	0.1	240.0	4.6	901.7
3:20	7.5	100.0	0.0	240.0	5.1	901.7
3:30	7.5	100.0	0.0	240.0	4.5	901.8
3:40	7.5	100.0	0.0	240.0	4.5	901.8
3:50	7.5	100.0	0.0	240.0	4.2	901.8
4:00	7.4	99.0	0.0	230.0	4.5	901.9
4:10	7.4	99.0	0.0	230.0	4.6	901.9
4:20	7.3	100.0	0.0	230.0	4.8	901.9
4:30	7.3	100.0	0.0	220.0	5.4	901.9
4:40	7.3	100.0	0.0	220.0	5.7	901.9
4:50	7.2	100.0	0.0	230.0	4.8	902.0
5:00	7.2	100.0	0.0	230.0	5.4	902.0
5:10	7.2	100.0	0.0	220.0	5.3	902.0
5:20	7.2	100.0	0.0	220.0	5.6	902.1
5:30	7.2	100.0	0.0	220.0	5.8	902.2
5:40	7.2	100.0	0.0	230.0	4.8	902.4
5:50	7.2	100.0	0.0	230.0	5.1	902.5
6:00	7.2	100.0	0.0	220.0	4.7	902.7
6:10	7.2	100.0	0.0	230.0	4.6	902.8
6:20	7.2	100.0	0.0	240.0	5.0	903.0
6:30	7.1	100.0	0.0	240.0	4.7	903.1
6:40	7.1	100.0	0.0	240.0	4.7	903.2
6:50	7.1	100.0	0.0	240.0	4.3	903.3
7:00	7.1	100.0	0.0	240.0	4.5	903.4
7:10	7.1	100.0	0.0	240.0	4.9	903.5
7:20	7.1	100.0	0.0	240.0	5.0	903.6
7:30	7.2	100.0	0.0	240.0	4.5	903.6
7:40	7.2	100.0	0.1	230.0	4.8	903.6
7:50	7.2	100.0	0.0	230.0	4.1	903.7

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
8:00	7.2	100.0	0.0	230.0	4.8	903.7
8:10	7.2	100.0	0.0	240.0	4.5	903.8
8:20	7.3	100.0	0.0	230.0	4.5	903.8
8:30	7.2	100.0	0.0	240.0	5.3	903.9
8:40	7.4	99.0	0.0	240.0	4.8	904.0
8:50	7.5	100.0	0.0	230.0	4.7	904.0
9:00	7.5	100.0	0.0	230.0	4.6	904.1
9:10	7.6	100.0	0.0	240.0	5.1	904.3
9:20	7.6	100.0	0.0	230.0	5.4	904.4
9:30	7.8	100.0	0.0	250.0	4.9	904.6
9:40	7.7	100.0	0.0	250.0	5.1	904.7
9:50	7.8	100.0	0.0	250.0	4.8	904.8
10:00	7.7	100.0	0.0	260.0	5.4	904.9
10:10	7.7	100.0	0.0	260.0	5.3	905.0
10:20	7.8	100.0	0.0	250.0	4.9	905.1
10:30	8.0	100.0	0.0	240.0	4.5	905.1
10:40	8.0	100.0	0.0	240.0	5.0	905.1
10:50	8.0	100.0	0.0	220.0	4.1	905.1
11:00	8.2	100.0	0.0	230.0	4.6	905.2
11:10	8.0	100.0	0.0	230.0	4.4	905.2
11:20	8.0	100.0	0.0	230.0	4.0	905.2
11:30	8.0	100.0	0.0	230.0	4.9	905.3
11:40	8.1	99.0	0.0	230.0	5.0	905.2
11:50	8.1	99.0	0.0	240.0	5.4	905.3
12:00	8.3	100.0	0.0	240.0	4.8	905.2
12:10	8.3	100.0	0.0	230.0	4.6	905.2
12:20	8.2	100.0	0.0	230.0	6.1	905.2
12:30	8.1	99.0	0.0	240.0	5.1	905.3
12:40	8.1	99.0	0.0	250.0	5.5	905.3
12:50	8.1	99.0	0.0	240.0	5.3	905.4
13:00	8.2	100.0	0.0	230.0	5.2	905.5
13:10	8.2	100.0	0.0	240.0	5.1	905.6
13:20	8.2	100.0	0.0	240.0	5.2	905.6
13:30	8.3	100.0	0.0	240.0	4.3	905.7
13:40	8.4	100.0	0.0	240.0	4.8	905.7
13:50	8.4	100.0	0.0	240.0	4.8	905.7
14:00	8.2	100.0	0.0	240.0	5.1	905.8
14:10	8.0	100.0	0.0	240.0	4.8	905.9
14:20	7.8	100.0	0.0	240.0	5.1	905.9
14:30	8.2	100.0	0.0	250.0	5.0	905.9
14:40	8.5	100.0	0.0	250.0	5.2	906.0
14:50	8.3	100.0	0.0	240.0	5.3	906.1
15:00	7.8	100.0	0.0	250.0	5.1	906.0
15:10	7.5	100.0	0.0	250.0	5.0	906.1
15:20	7.4	100.0	0.0	250.0	3.9	906.2
15:30	7.4	99.0	0.0	240.0	3.6	906.3
15:40	7.4	99.0	0.0	240.0	3.6	906.3
15:50	7.4	99.0	0.0	240.0	4.4	906.4
16:00	7.3	100.0	0.0	240.0	4.0	906.4
16:10	7.1	100.0	0.0	240.0	4.1	906.5
16:20	6.9	100.0	0.0	240.0	5.3	906.5
16:30	6.9	100.0	0.0	240.0	5.8	906.5
16:40	6.9	100.0	0.0	240.0	5.7	906.7
16:50	6.9	100.0	0.0	240.0	6.0	906.7
17:00	7.0	100.0	0.0	240.0	5.7	906.8
17:10	7.0	100.0	0.0	240.0	5.4	907.0
17:20	7.0	100.0	0.0	240.0	6.0	907.0
17:30	6.9	100.0	0.0	240.0	6.6	907.1
17:40	6.9	100.0	0.0	240.0	5.9	907.1
17:50	6.8	100.0	0.0	240.0	5.8	907.2
18:00	6.8	100.0	0.0	240.0	5.6	907.3
18:10	6.7	100.0	0.0	240.0	5.8	907.3
18:20	6.7	100.0	0.0	240.0	5.5	907.3
18:30	6.7	100.0	0.0	240.0	4.7	907.4
18:40	6.7	100.0	0.0	240.0	4.4	907.5
18:50	6.8	100.0	0.0	240.0	4.1	907.5
19:00	6.8	100.0	0.0	250.0	4.4	907.6
19:10	6.8	100.0	0.0	250.0	4.0	907.7
19:20	6.9	100.0	0.0	250.0	3.5	907.8
19:30	6.9	100.0	0.0	250.0	3.8	907.7
19:40	6.9	100.0	0.0	250.0	4.0	907.8
19:50	6.9	100.0	0.0	250.0	3.7	907.9
20:00	6.9	100.0	0.0	250.0	3.3	908.1
20:10	7.0	100.0	0.0	260.0	3.1	908.2
20:20	7.2	100.0	0.0	250.0	2.8	908.2
20:30	7.4	99.0	0.0	240.0	2.6	908.3
20:40	7.5	100.0	0.0	240.0	2.8	908.3
20:50	7.5	100.0	0.0	240.0	2.8	908.4
21:00	7.5	100.0	0.0	240.0	3.1	908.5
21:10	7.5	100.0	0.0	240.0	2.7	908.5
21:20	7.5	100.0	0.0	240.0	2.6	908.6
21:30	7.5	100.0	0.0	250.0	3.0	908.7
21:40	7.5	100.0	0.0	250.0	3.1	908.6
21:50	7.6	100.0	0.0	240.0	2.8	908.7
22:00	7.6	100.0	0.0	260.0	3.2	908.7
22:10	7.6	100.0	0.0	260.0	3.1	908.7
22:20	7.6	100.0	0.0	250.0	3.2	908.7
22:30	7.5	100.0	0.0	250.0	3.1	908.7
22:40	7.4	99.0	0.0	270.0	3.0	908.8
22:50	7.4	99.0	0.0	260.0	2.6	908.8
23:00	7.4	99.0	0.0	270.0	2.8	908.8
23:10	7.3	100.0	0.0	280.0	3.0	908.8
23:20	7.3	100.0	0.0	280.0	2.4	908.9
23:30	7.2	100.0	0.0	280.0	1.9	908.8
23:40	7.0	100.0	0.0	290.0	1.7	908.9
23:50	6.7	100.0	0.0	280.0	1.5	908.9

F: The cloud event 23/25-10-2001

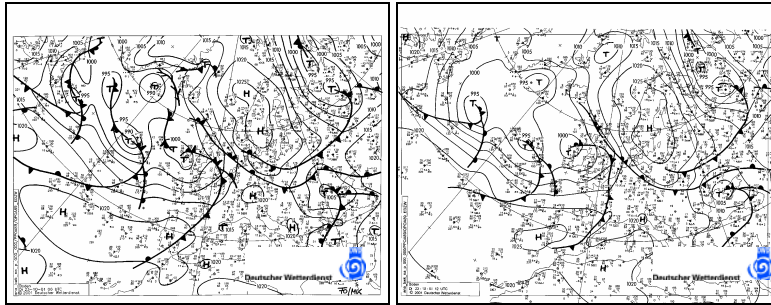


Fig. F1: Surface weather charts on 23 October 2001, 06 and 12 UTC (source: DWD).

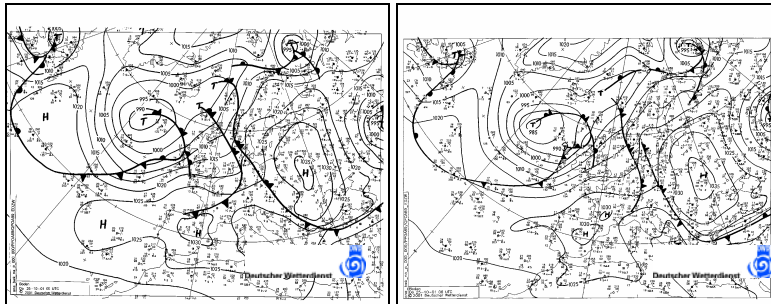


Fig. F2: Surface weather charts on 25 October 2001, 00 and 06 UTC (source: DWD).

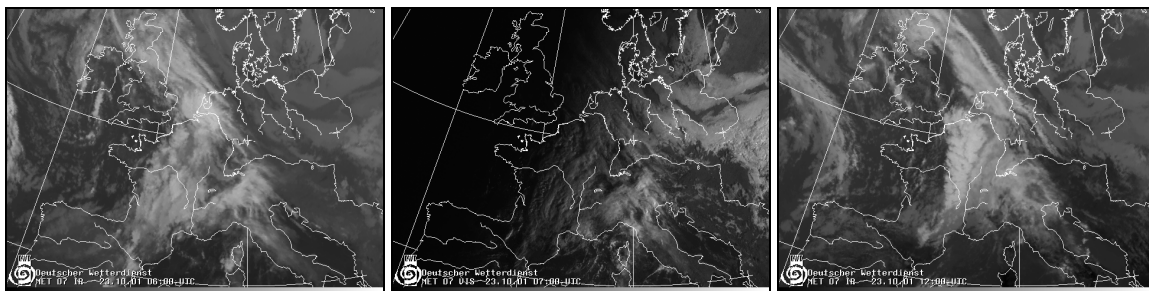


Fig. F3: IR-satellite pictures on 23 October 2001, 06, 07, and 12 UTC (source: DWD).

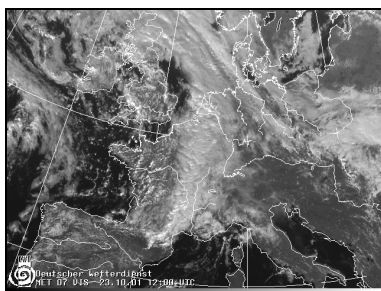


Fig. F4: VIS-satellite pictures on 23 October 2001, 12 UTC (source: DWD).

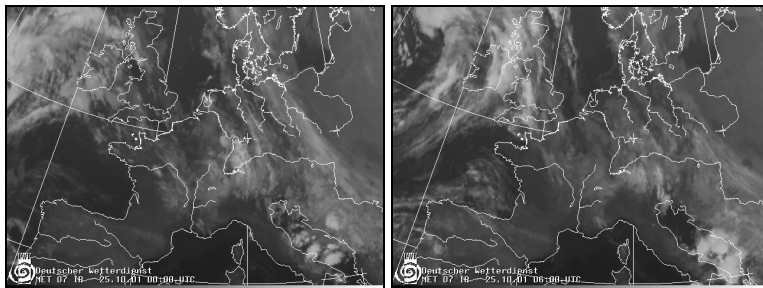


Fig. F5: IR-satellite pictures on 25 October 2001, 00 and 06 UTC (source: DWD).

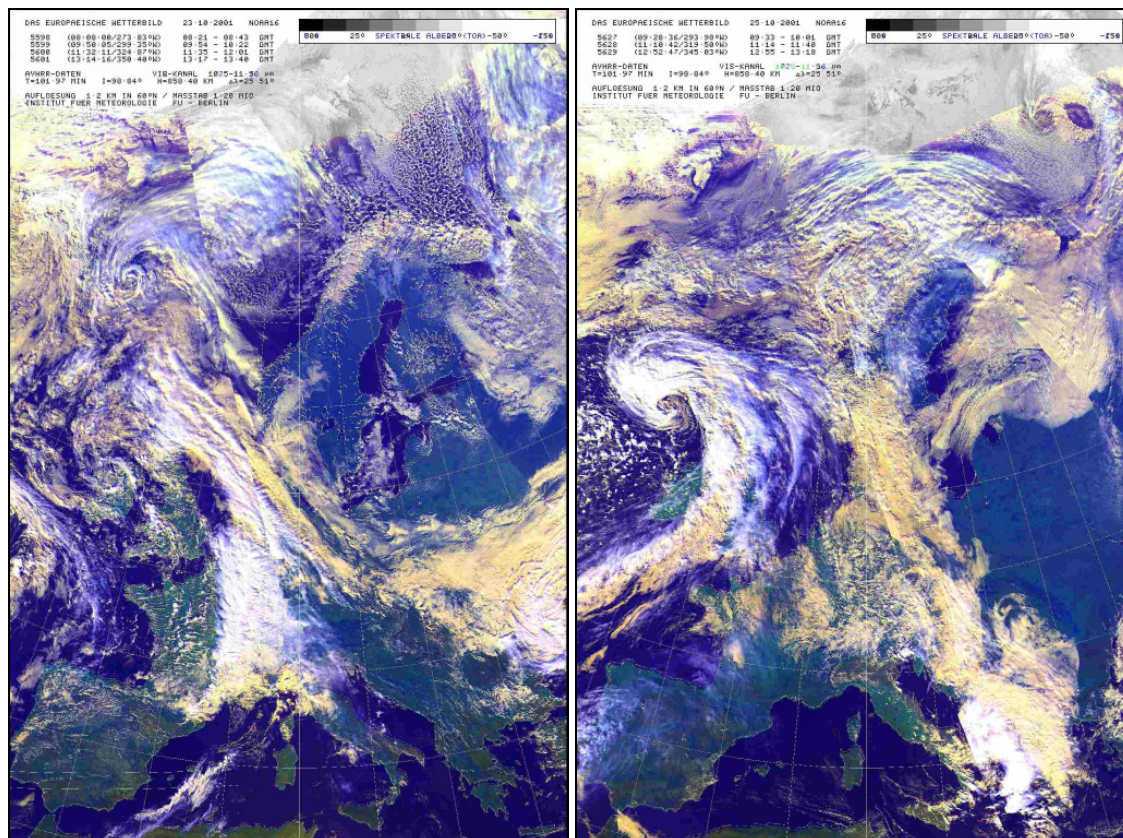


Fig. F6: NOAA satellite pictures on 23 and 25 October 2001 (source: Berliner Wetterkarte, 2001).

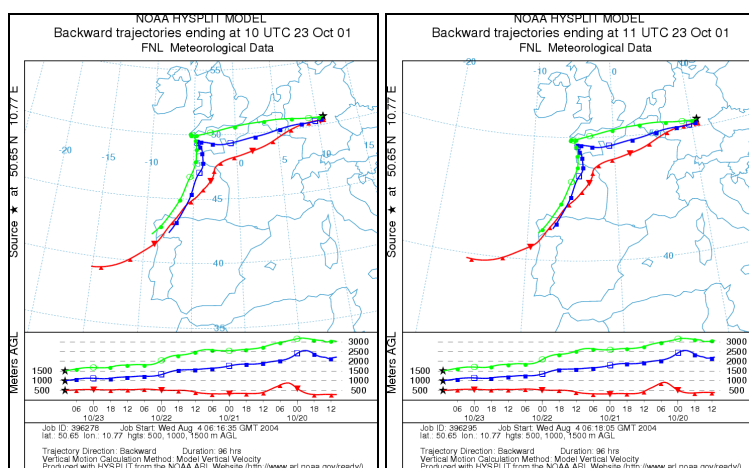


Fig. F7: Backward trajectories on 23 October 2001, 10 and 11 UTC (source: NOAA ARL Website).

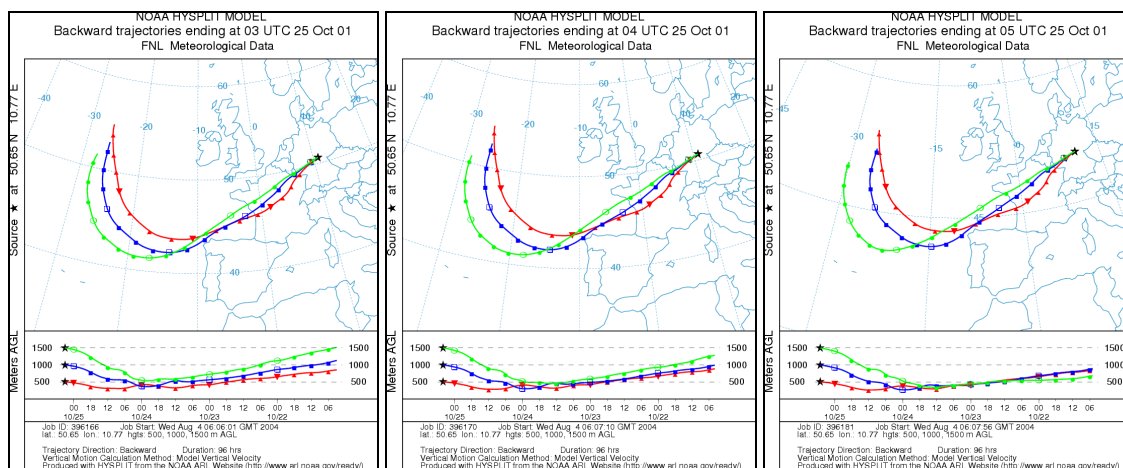


Fig. F8: Backward trajectories on 25 October 2001, 03, 04, and 05 UTC (source: NOAA ARL Website).

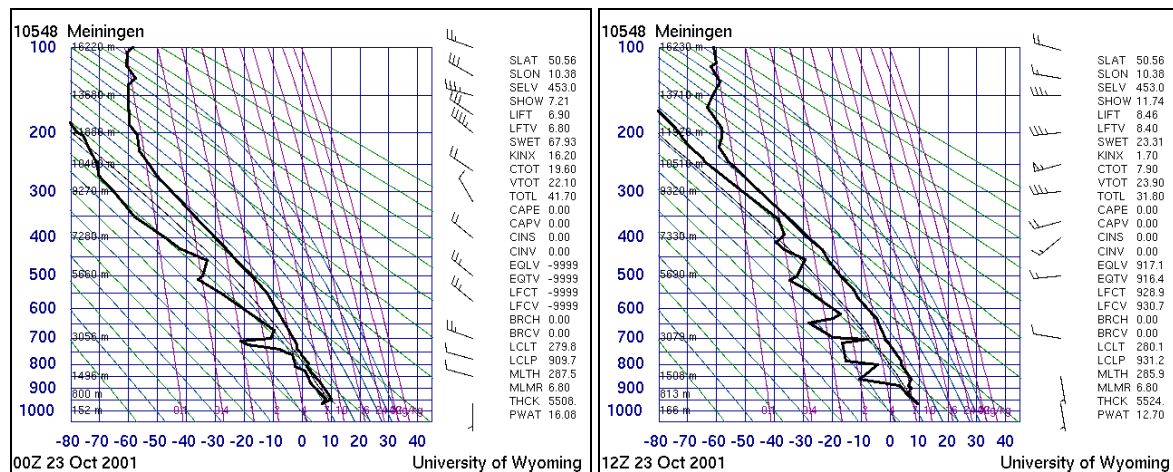


Fig. F9: Vertical rawinsonde profiles of temperature and dew-point temperature on 23 October 2001, 00 and 12 UTC (source: University of Wyoming).

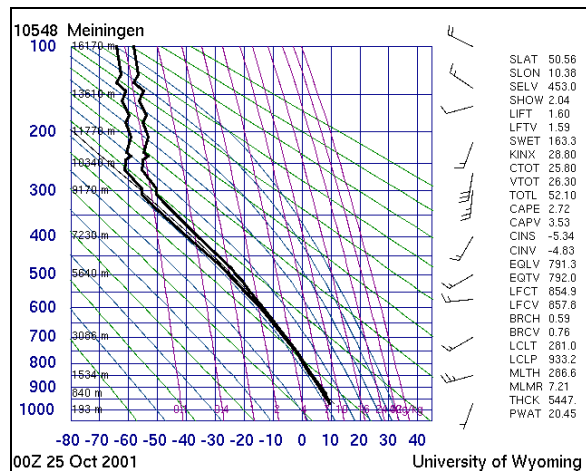


Fig. F10: Vertical rawinsonde profiles of temperature and dew-point temperature on 25 October 2001, 00 UTC (source: University of Wyoming).

Table F1: Locally measured meteorological data at the summit station Schmücke on 23 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	6.5	100.0	0.0	290.0	1.5	908.8
0:10	6.5	100.0	0.0	310.0	1.4	908.9
0:20	6.3	100.0	0.0	280.0	1.3	909.0
0:30	6.0	100.0	0.0	270.0	1.1	909.0
0:40	5.8	100.0	0.0	280.0	0.8	909.0
0:50	5.7	100.0	0.0	300.0	1.1	909.0
1:00	5.7	100.0	0.0	290.0	1.5	909.0
1:10	5.5	100.0	0.0	300.0	1.7	909.0
1:20	5.5	100.0	0.0	310.0	1.7	909.0
1:30	5.4	100.0	0.0	310.0	1.6	909.0
1:40	5.3	100.0	0.0	310.0	1.5	909.0
1:50	5.2	100.0	0.0	310.0	1.1	909.0
2:00	5.2	100.0	0.0	340.0	1.3	908.9
2:10	5.2	100.0	0.0	290.0	1.2	909.0
2:20	5.4	100.0	0.0	220.0	1.0	909.1
2:30	5.7	100.0	0.0	230.0	0.7	909.1
2:40	6.0	100.0	0.0	230.0	0.9	909.1
2:50	6.0	100.0	0.0	230.0	0.9	909.2
3:00	6.1	100.0	0.0	230.0	1.2	909.2
3:10	6.2	100.0	0.0	230.0	1.6	909.3
3:20	6.3	100.0	0.0	230.0	1.7	909.3
3:30	6.3	100.0	0.1	230.0	1.4	909.3
3:40	6.3	100.0	0.0	240.0	1.4	909.3
3:50	6.2	100.0	0.0	240.0	1.2	909.3
4:00	6.1	100.0	0.1	230.0	0.8	909.3
4:10	5.9	100.0	0.0	230.0	0.4	909.3
4:20	5.7	100.0	0.0	230.0	0.4	909.4
4:30	5.6	100.0	0.2	230.0	0.7	909.4
4:40	5.6	100.0	0.1	230.0	0.7	909.4
4:50	5.5	100.0	0.1	220.0	0.7	909.5
5:00	5.6	100.0	0.0	220.0	0.9	909.4
5:10	5.5	100.0	0.1	230.0	0.5	909.3
5:20	5.4	100.0	0.1	220.0	0.9	909.4
5:30	5.2	100.0	0.1	200.0	0.8	909.4
5:40	5.0	100.0	0.1	210.0	1.3	909.4
5:50	5.2	100.0	0.1	220.0	2.0	909.5
6:00	5.3	100.0	0.0	230.0	1.7	909.5
6:10	5.2	100.0	0.0	230.0	0.9	909.5
6:20	5.1	100.0	0.1	230.0	0.6	909.5

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
6:30	5.1	100.0	0.1	230.0	1.0	909.5
6:40	5.2	100.0	0.1	220.0	0.9	909.5
6:50	5.3	100.0	0.0	220.0	1.3	909.6
7:00	5.6	100.0	0.1	220.0	1.6	909.7
7:10	5.8	100.0	0.0	220.0	1.1	909.8
7:20	5.7	100.0	0.0	210.0	1.4	909.8
7:30	5.8	100.0	0.0	220.0	1.3	909.8
7:40	6.0	100.0	0.1	220.0	1.1	909.8
7:50	6.1	100.0	0.0	220.0	0.9	909.8
8:00	6.3	100.0	0.0	220.0	1.3	909.8
8:10	6.5	100.0	0.0	210.0	1.1	909.8
8:20	6.6	100.0	0.0	210.0	1.8	909.7
8:30	6.5	100.0	0.0	220.0	2.6	909.8
8:40	6.3	100.0	0.0	220.0	2.9	909.9
8:50	6.5	100.0	0.0	220.0	2.8	909.9
9:00	6.5	100.0	0.0	220.0	3.4	910.0
9:10	6.5	100.0	0.0	210.0	3.6	910.1
9:20	6.4	100.0	0.0	220.0	4.1	910.1
9:30	6.5	100.0	0.0	220.0	3.7	910.2
9:40	6.6	100.0	0.0	210.0	3.3	910.2
9:50	6.6	100.0	0.0	210.0	3.5	910.3
10:00	6.8	100.0	0.0	210.0	2.9	910.3
10:10	7.0	100.0	0.0	210.0	2.5	910.2
10:20	7.0	100.0	0.0	210.0	2.3	910.2
10:30	7.1	100.0	0.0	210.0	2.5	910.2
10:40	7.0	100.0	0.0	210.0	1.9	910.1
10:50	7.4	100.0	0.0	210.0	1.8	910.1
11:00	7.6	100.0	0.0	210.0	2.2	909.9
11:10	7.9	100.0	0.0	200.0	1.7	909.9
11:20	8.3	100.0	0.0	210.0	1.4	909.8
11:30	8.4	100.0	0.0	190.0	1.0	909.7
11:40	8.9	99.0	0.0	210.0	1.0	909.6
11:50	9.7	100.0	0.0	210.0	1.5	909.6
12:00	10.0	100.0	0.0	200.0	2.0	909.7
12:10	9.9	100.0	0.0	220.0	2.7	909.8
12:20	10.0	100.0	0.0	210.0	3.0	909.8
12:30	10.6	100.0	0.0	210.0	2.2	909.7
12:40	10.3	99.0	0.0	220.0	2.8	909.8
12:50	10.1	97.0	0.0	220.0	2.5	909.7
13:00	9.5	94.0	0.0	220.0	3.1	909.7
13:10	8.8	93.0	0.0	230.0	2.5	909.7
13:20	8.7	94.0	0.0	220.0	2.1	909.7
13:30	8.7	94.0	0.0	230.0	1.5	909.7
13:40	8.7	94.0	0.0	210.0	0.5	909.7
13:50	8.7	94.0	0.0	220.0	0.3	909.7
14:00	8.8	93.0	0.0	200.0	0.5	909.7
14:10	8.9	94.0	0.0	120.0	0.9	909.6
14:20	8.8	93.0	0.0	140.0	1.2	909.7
14:30	8.8	93.0	0.0	160.0	1.3	909.7
14:40	8.8	93.0	0.0	160.0	1.2	909.7
14:50	8.9	92.0	0.0	150.0	1.4	909.7
15:00	8.9	92.0	0.0	160.0	1.5	909.8
15:10	8.7	91.0	0.0	160.0	1.5	909.8
15:20	8.6	91.0	0.0	200.0	1.0	909.8
15:30	8.3	91.0	0.0	190.0	1.3	909.9
15:40	8.2	92.0	0.0	180.0	1.1	909.9
15:50	7.9	93.0	0.0	180.0	0.8	909.9
16:00	7.7	93.0	0.0	150.0	1.8	909.9
16:10	7.5	92.0	0.0	130.0	2.0	909.9
16:20	7.4	93.0	0.0	140.0	2.3	909.9
16:30	7.3	94.0	0.0	130.0	2.4	909.9
16:40	7.1	94.0	0.0	140.0	2.7	909.9
16:50	7.0	94.0	0.0	140.0	2.9	910.0
17:00	6.9	94.0	0.0	140.0	3.0	910.0
17:10	6.8	94.0	0.0	150.0	3.3	910.1
17:20	6.7	94.0	0.0	160.0	3.8	910.2
17:30	6.7	94.0	0.0	160.0	4.0	910.2
17:40	6.7	91.0	0.0	170.0	3.3	910.2
17:50	6.5	92.0	0.0	200.0	3.1	910.2
18:00	6.3	94.0	0.0	200.0	3.2	910.2
18:10	6.2	94.0	0.0	190.0	2.9	910.2
18:20	6.3	94.0	0.0	190.0	2.9	910.2
18:30	6.3	95.0	0.0	190.0	2.9	910.2
18:40	6.3	95.0	0.0	190.0	2.8	910.2
18:50	6.4	97.0	0.0	180.0	3.2	910.1
19:00	6.6	97.0	0.0	170.0	4.1	910.2
19:10	6.8	97.0	0.0	160.0	4.2	910.2
19:20	6.8	97.0	0.0	160.0	4.2	910.3
19:30	6.9	96.0	0.0	160.0	4.1	910.4
19:40	6.9	96.0	0.0	160.0	4.1	910.5
19:50	6.9	96.0	0.0	160.0	3.8	910.5
20:00	6.9	97.0	0.0	160.0	3.4	910.6
20:10	7.0	97.0	0.0	150.0	3.3	910.6
20:20	7.0	97.0	0.0	160.0	3.3	910.7
20:30	7.1	97.0	0.0	170.0	2.8	910.7
20:40	7.1	97.0	0.0	200.0	2.1	910.7
20:50	7.2	97.0	0.0	190.0	3.1	910.7
21:00	7.3	97.0	0.0	180.0	3.2	910.7
21:10	7.4	97.0	0.0	190.0	2.5	910.7
21:20	7.3	97.0	0.0	190.0	2.2	910.7
21:30	7.2	97.0	0.0	200.0	2.6	910.7
21:40	7.2	97.0	0.0	190.0	2.8	910.7
21:50	7.2	97.0	0.0	190.0	2.6	910.7
22:00	7.2	97.0	0.0	190.0	2.2	910.7
22:10	7.2	97.0	0.0	200.0	2.2	910.7
22:20	7.3	97.0	0.0	200.0	2.5	910.8
22:30	7.3	97.0	0.0	190.0	2.6	910.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
22:40	7.4	99.0	0.0	190.0	2.4	910.7
22:50	7.4	99.0	0.0	200.0	3.1	910.7
23:00	7.4	99.0	0.0	200.0	3.5	910.8
23:10	7.4	99.0	0.0	200.0	3.2	910.8
23:20	7.3	100.0	0.0	210.0	2.9	910.8
23:30	7.2	98.0	0.0	210.0	2.5	910.9
23:40	7.2	98.0	0.0	210.0	3.1	910.8
23:50	7.2	98.0	0.0	210.0	3.5	910.9

Table F2: Locally measured meteorological data at the summit station Schmücke on 25 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	7.0	100.0	0.5	220.0	6.8	912.7
0:10	6.9	100.0	0.2	220.0	6.3	912.6
0:20	6.9	100.0	0.1	210.0	6.1	912.6
0:30	6.9	100.0	0.0	220.0	6.8	912.6
0:40	6.9	100.0	0.1	220.0	6.3	912.6
0:50	6.9	100.0	0.0	220.0	6.6	912.6
1:00	6.9	100.0	0.1	220.0	6.9	912.6
1:10	6.9	100.0	0.0	220.0	5.5	912.5
1:20	6.8	100.0	0.0	220.0	6.0	912.5
1:30	6.8	100.0	0.0	220.0	5.9	912.5
1:40	6.7	100.0	0.0	220.0	5.8	912.5
1:50	6.7	100.0	0.0	220.0	5.6	912.5
2:00	6.6	100.0	0.0	220.0	4.2	912.5
2:10	6.6	100.0	0.0	230.0	4.3	912.5
2:20	6.6	100.0	0.0	220.0	4.3	912.5
2:30	6.6	100.0	0.1	240.0	3.3	912.5
2:40	6.5	100.0	0.0	220.0	4.4	912.6
2:50	6.5	100.0	0.0	220.0	4.4	912.7
3:00	6.5	100.0	0.0	220.0	4.6	912.7
3:10	6.5	100.0	0.0	220.0	3.9	912.8
3:20	6.4	100.0	0.0	220.0	4.2	912.8
3:30	6.4	100.0	0.0	220.0	4.0	912.8
3:40	6.4	100.0	0.0	220.0	2.6	912.8
3:50	6.4	100.0	0.0	220.0	3.0	912.8
4:00	6.4	100.0	0.0	210.0	4.1	912.8
4:10	6.4	100.0	0.0	220.0	3.5	912.8
4:20	6.4	100.0	0.0	220.0	3.0	912.8
4:30	6.3	100.0	0.0	220.0	3.5	912.8
4:40	6.3	100.0	0.0	210.0	4.3	912.8
4:50	6.3	100.0	0.0	210.0	4.6	912.7
5:00	6.3	100.0	0.0	220.0	4.6	912.7
5:10	6.3	100.0	0.0	220.0	4.6	912.7
5:20	6.3	100.0	0.2	230.0	5.1	912.8
5:30	6.3	100.0	2.2	220.0	4.8	912.8
5:40	6.3	100.0	5.1	220.0	3.7	912.9
5:50	6.3	100.0	7.3	220.0	3.8	912.8
6:00	6.3	100.0	2.2	230.0	3.3	912.9
6:10	6.3	100.0	0.3	220.0	3.5	912.9
6:20	6.3	100.0	0.2	220.0	3.9	913.0
6:30	6.3	100.0	0.1	210.0	4.9	913.1
6:40	6.3	100.0	0.1	210.0	4.7	913.1
6:50	6.3	100.0	0.1	220.0	4.7	913.2
7:00	6.3	100.0	0.4	220.0	4.2	913.2
7:10	6.3	100.0	1.0	220.0	4.0	913.3
7:20	6.3	100.0	0.7	210.0	4.4	913.4
7:30	6.3	100.0	0.9	210.0	5.7	913.4
7:40	6.3	100.0	1.7	210.0	4.8	913.5
7:50	6.3	100.0	0.8	210.0	4.7	913.5
8:00	6.3	100.0	0.4	210.0	4.8	913.5
8:10	6.4	100.0	0.3	220.0	4.9	913.6
8:20	6.4	100.0	0.2	220.0	4.7	913.7
8:30	6.4	100.0	0.1	210.0	4.8	913.7
8:40	6.3	100.0	0.0	210.0	5.7	913.6
8:50	6.4	100.0	0.1	210.0	5.7	913.7
9:00	6.4	100.0	0.0	210.0	5.2	913.8
9:10	6.3	100.0	0.0	210.0	5.4	913.8
9:20	6.4	100.0	0.0	210.0	5.5	913.9
9:30	6.4	100.0	0.0	210.0	5.5	914.0
9:40	6.4	100.0	0.0	210.0	5.5	914.1
9:50	6.3	100.0	0.0	210.0	6.0	914.1
10:00	6.3	100.0	0.0	220.0	5.9	914.2
10:10	6.3	100.0	0.0	220.0	5.0	914.2
10:20	6.4	100.0	0.0	220.0	4.6	914.2
10:30	6.4	100.0	0.0	220.0	4.3	914.1
10:40	6.4	100.0	0.0	210.0	5.0	914.2
10:50	6.5	100.0	0.0	220.0	4.8	914.2
11:00	6.5	100.0	0.0	220.0	4.6	914.3
11:10	6.6	100.0	0.0	230.0	3.4	914.3
11:20	6.6	100.0	0.0	220.0	3.7	914.3
11:30	6.7	100.0	0.0	220.0	4.7	914.2
11:40	6.7	100.0	0.0	210.0	4.1	914.2
11:50	6.8	100.0	1.4	220.0	3.8	914.3
12:00	6.8	100.0	4.2	220.0	4.6	914.2
12:10	6.8	100.0	3.7	220.0	4.9	914.2
12:20	6.8	100.0	11.9	240.0	4.3	914.2
12:30	6.8	100.0	0.4	250.0	4.5	914.2
12:40	6.8	100.0	0.2	240.0	4.2	914.2
12:50	6.9	100.0	0.0	250.0	4.4	914.2
13:00	6.9	100.0	0.0	240.0	4.6	914.1
13:10	6.9	100.0	0.1	220.0	4.3	914.2
13:20	7.0	100.0	0.0	250.0	3.6	914.2
13:30	7.0	100.0	0.0	250.0	3.7	914.2
13:40	7.1	100.0	0.0	240.0	3.2	914.2
13:50	7.2	100.0	0.0	230.0	3.9	914.2
14:00	7.1	100.0	0.0	240.0	3.8	914.2
14:10	7.2	100.0	0.0	230.0	3.9	914.1
14:20	7.2	100.0	0.0	220.0	3.8	914.1
14:30	7.3	100.0	0.0	220.0	4.7	914.1
14:40	7.2	100.0	0.0	220.0	4.3	914.2
14:50	7.1	100.0	0.0	220.0	4.4	914.2
15:00	7.1	100.0	0.0	220.0	4.0	914.3
15:10	7.1	100.0	0.0	210.0	4.7	914.2
15:20	7.1	100.0	0.0	220.0	4.9	914.3
15:30	7.1	100.0	0.0	220.0	4.0	914.3
15:40	7.2	100.0	0.0	220.0	3.6	914.3
15:50	7.2	100.0	0.0	220.0	3.8	914.3
16:00	7.1	100.0	0.0	220.0	4.2	914.3
16:10	7.1	100.0	0.0	220.0	3.6	914.4
16:20	7.1	100.0	0.0	220.0	3.9	914.4
16:30	7.1	100.0	0.0	220.0	4.5	914.5
16:40	7.1	100.0	0.0	210.0	4.1	914.6

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
16:50	7.1	100.0	0.0	230.0	4.0	914.6
17:00	7.0	100.0	0.0	230.0	3.8	914.7
17:10	7.1	100.0	0.0	230.0	4.0	914.7
17:20	7.1	100.0	0.0	220.0	5.3	914.8
17:30	7.1	100.0	0.0	210.0	5.0	914.7
17:40	7.1	100.0	0.0	220.0	5.0	914.7
17:50	7.0	100.0	0.0	210.0	6.3	914.9
18:00	7.1	100.0	0.0	210.0	5.9	915.0
18:10	7.0	100.0	0.0	210.0	5.8	914.9
18:20	7.0	100.0	0.0	210.0	5.5	914.9
18:30	7.0	100.0	0.0	220.0	4.6	914.8
18:40	7.0	100.0	0.0	220.0	5.2	914.9
18:50	6.9	100.0	0.0	220.0	5.5	914.9
19:00	7.0	100.0	0.0	220.0	5.5	914.9
19:10	6.9	100.0	0.0	220.0	5.6	914.9
19:20	6.9	100.0	0.0	220.0	5.8	914.9
19:30	6.9	100.0	0.0	210.0	5.7	914.9
19:40	6.9	100.0	0.0	220.0	5.6	915.0
19:50	6.8	100.0	0.0	220.0	4.8	915.2
20:00	6.9	100.0	0.0	220.0	3.5	915.3
20:10	6.8	100.0	0.0	220.0	4.5	915.4
20:20	6.7	100.0	0.0	220.0	3.8	915.3
20:30	6.8	100.0	0.3	220.0	3.4	915.4
20:40	6.7	100.0	0.6	220.0	3.6	915.4
20:50	6.7	100.0	0.3	230.0	2.7	915.4
21:00	6.6	100.0	0.1	220.0	3.4	915.4
21:10	6.6	100.0	0.0	220.0	3.2	915.4
21:20	6.5	100.0	0.1	220.0	4.1	915.5
21:30	6.5	100.0	0.0	220.0	4.1	915.4
21:40	6.6	100.0	0.0	230.0	3.4	915.4
21:50	6.6	100.0	0.0	240.0	3.3	915.4
22:00	6.7	100.0	0.0	240.0	3.1	915.4
22:10	6.7	100.0	0.0	240.0	3.4	915.4
22:20	6.7	100.0	0.0	240.0	2.7	915.5
22:30	6.7	100.0	0.0	250.0	2.5	915.5
22:40	6.7	100.0	0.0	230.0	2.4	915.4
22:50	6.6	100.0	0.0	240.0	2.4	915.4
23:00	6.6	100.0	0.0	230.0	2.3	915.3
23:10	6.6	100.0	0.0	220.0	2.5	915.3
23:20	6.5	100.0	0.0	230.0	1.9	915.3
23:30	6.4	100.0	0.0	240.0	2.1	915.1
23:40	6.4	100.0	0.0	230.0	2.6	915.1
23:50	6.3	100.0	0.0	230.0	2.8	915.1

G: The cloud event 26-10-2001

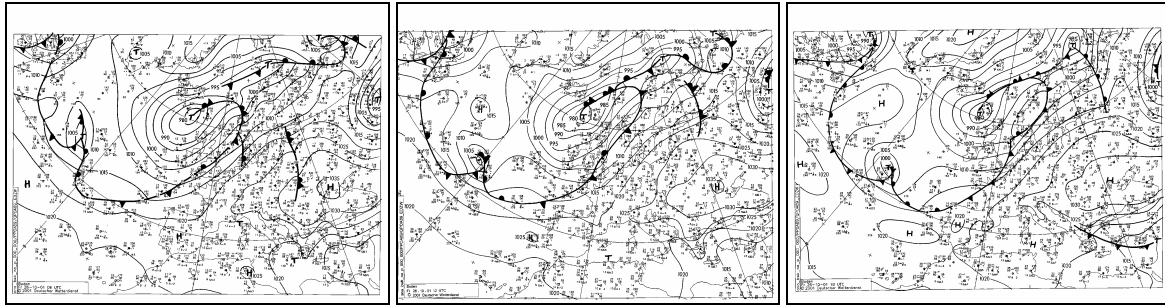


Fig. G1: Surface weather chart on 26 October 2001, 06, 12, and 18 UTC (source: DWD).

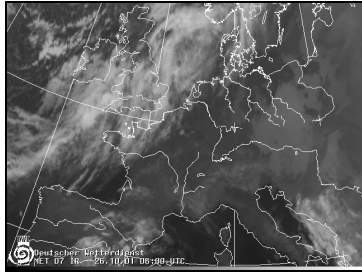


Fig. G2: IR-satellite picture on 26 October 2001, 06 UTC (source: DWD).

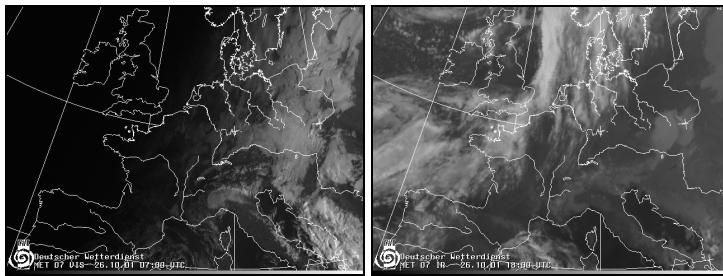


Fig. G3: VIS-satellite picture on 26 October 2001, 07 and 18 UTC (source: DWD).

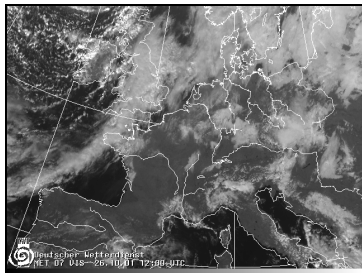
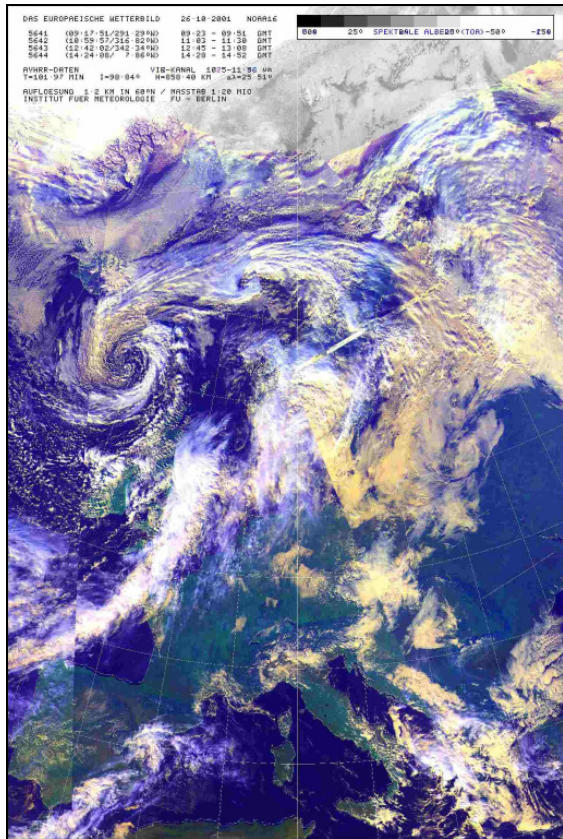


Fig. G4: VIS-satellite picture on 26 October 2001, 12 UTC (source: DWD).



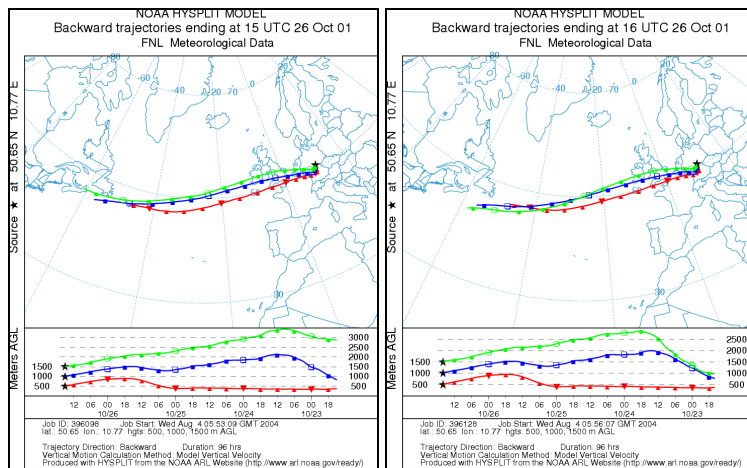


Fig. G8: Backward trajectories on 26 October 2001, 15 and 16 UTC (source: NOAA ARL Website).

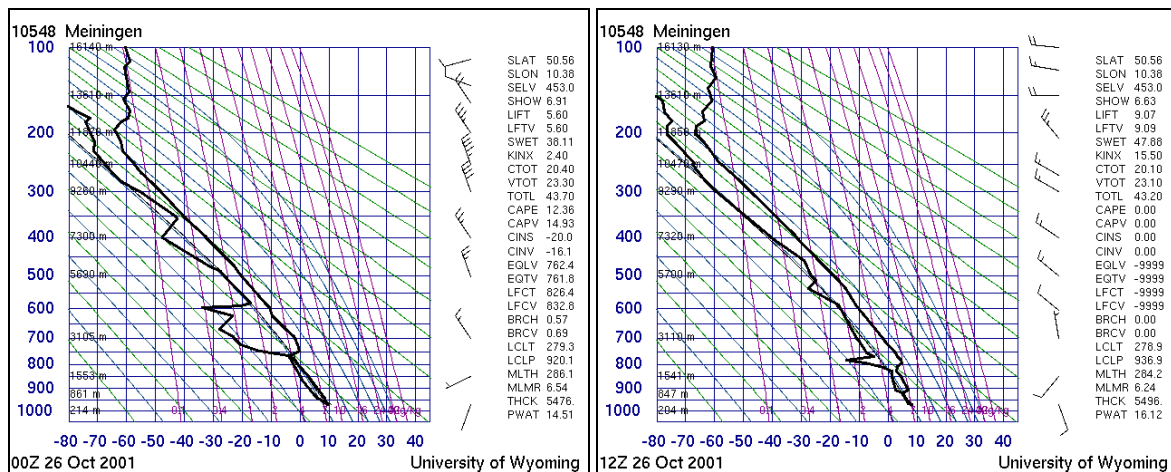


Fig. G9: Vertical rawinsonde profile of temperature and dew-point temperature on 26 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table G1: Locally measured meteorological data at the summit station Schmücke on 26 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	6.3	100.0	0.0	230.0	2.4	915.1
0:10	6.3	100.0	0.0	230.0	2.1	915.1
0:20	6.3	100.0	0.0	220.0	2.9	915.1
0:30	6.3	100.0	0.0	220.0	2.9	915.1
0:40	6.3	100.0	0.0	220.0	3.2	915.0
0:50	6.2	100.0	0.0	210.0	3.0	915.0
1:00	6.1	100.0	0.0	220.0	3.4	914.9
1:10	6.1	100.0	0.0	220.0	3.9	914.8
1:20	6.0	100.0	0.0	220.0	4.4	914.9
1:30	6.0	100.0	0.0	220.0	3.9	914.9
1:40	6.1	100.0	0.0	220.0	4.1	914.8
1:50	6.1	100.0	0.0	210.0	3.8	914.8
2:00	6.1	100.0	0.0	210.0	3.9	914.8
2:10	6.0	100.0	0.0	220.0	4.6	914.7
2:20	5.9	100.0	0.0	210.0	4.0	914.7
2:30	5.9	100.0	0.0	220.0	3.8	914.6
2:40	5.8	100.0	0.0	230.0	3.7	914.5
2:50	5.8	100.0	0.0	220.0	4.1	914.6
3:00	5.8	100.0	0.0	230.0	4.4	914.6
3:10	5.8	100.0	0.0	230.0	4.2	914.6
3:20	5.8	100.0	0.0	220.0	3.9	914.6
3:30	5.8	100.0	0.0	220.0	4.0	914.5
3:40	5.7	100.0	0.0	230.0	4.8	914.5
3:50	5.7	100.0	0.0	220.0	4.8	914.5
4:00	5.8	100.0	0.0	220.0	4.5	914.5
4:10	5.8	100.0	0.0	220.0	4.4	914.5
4:20	5.7	100.0	0.0	220.0	4.3	914.4
4:30	5.7	100.0	0.0	230.0	4.3	914.4
4:40	5.8	100.0	0.0	220.0	3.4	914.3
4:50	5.8	100.0	0.0	220.0	3.5	914.2
5:00	5.9	100.0	0.0	220.0	3.5	914.1
5:10	5.9	100.0	0.0	220.0	3.4	914.0
5:20	5.9	100.0	0.0	220.0	3.6	914.0
5:30	5.9	100.0	0.0	220.0	4.0	913.9
5:40	6.0	100.0	0.0	220.0	3.8	913.9
5:50	6.0	100.0	0.0	220.0	4.2	913.9
6:00	5.9	100.0	0.0	210.0	4.1	913.9
6:10	5.9	100.0	0.0	220.0	4.0	913.9
6:20	5.8	100.0	0.0	220.0	4.0	914.0
6:30	5.9	100.0	0.0	220.0	4.3	914.0
6:40	5.9	100.0	0.0	220.0	4.5	914.1
6:50	5.9	100.0	0.0	230.0	4.2	914.2
7:00	5.9	100.0	0.0	220.0	3.9	914.2
7:10	5.9	100.0	0.0	220.0	3.8	914.3
7:20	5.9	100.0	0.0	230.0	3.7	914.2
7:30	5.9	100.0	0.0	230.0	3.9	914.2
7:40	5.9	100.0	0.0	220.0	3.4	914.2
7:50	5.9	100.0	0.0	220.0	3.8	914.2
8:00	5.8	100.0	0.0	220.0	3.9	914.3
8:10	5.9	100.0	0.0	220.0	3.6	914.3

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
8:20	6.0	100.0	0.0	210.0	4.2	914.3
8:30	5.9	100.0	0.0	210.0	4.3	914.2
8:40	5.9	100.0	0.0	220.0	4.2	914.3
8:50	6.0	100.0	0.0	220.0	3.3	914.3
9:00	6.0	100.0	0.0	220.0	3.7	914.2
9:10	6.1	100.0	0.0	210.0	3.9	914.2
9:20	6.1	100.0	0.0	220.0	4.0	914.2
9:30	6.1	100.0	0.0	220.0	4.4	914.1
9:40	6.1	100.0	0.0	220.0	3.9	914.1
9:50	6.0	100.0	0.0	210.0	4.4	914.0
10:00	6.0	100.0	0.0	210.0	4.2	914.1
10:10	5.9	100.0	0.0	210.0	4.3	914.0
10:20	5.8	100.0	0.0	210.0	4.2	914.0
10:30	5.9	100.0	0.0	210.0	4.1	913.9
10:40	5.7	100.0	0.0	210.0	4.6	913.7
10:50	5.6	100.0	0.0	210.0	4.8	913.7
11:00	5.6	100.0	0.0	210.0	4.1	913.6
11:10	5.7	100.0	0.0	210.0	3.4	913.5
11:20	5.8	100.0	0.0	210.0	3.0	913.3
11:30	5.8	100.0	0.0	210.0	3.2	913.2
11:40	6.1	100.0	0.0	200.0	3.5	913.1
11:50	5.9	100.0	0.0	210.0	3.9	913.0
12:00	5.9	100.0	0.0	210.0	4.0	913.0
12:10	5.9	100.0	0.0	210.0	3.9	913.0
12:20	5.9	100.0	0.0	210.0	3.4	912.9
12:30	6.0	100.0	0.0	210.0	3.9	912.8
12:40	5.9	100.0	0.0	210.0	4.4	912.8
12:50	5.8	100.0	0.0	210.0	4.3	912.7
13:00	5.8	100.0	0.0	210.0	5.1	912.7
13:10	5.6	100.0	0.0	220.0	5.2	912.6
13:20	5.6	100.0	0.0	210.0	5.1	912.6
13:30	5.6	100.0	0.0	210.0	5.6	912.5
13:40	5.5	100.0	0.0	210.0	5.3	912.4
13:50	5.6	100.0	0.0	210.0	4.3	912.4
14:00	5.5	100.0	0.0	210.0	5.3	912.4
14:10	5.5	100.0	0.0	210.0	4.9	912.3
14:20	5.5	100.0	0.0	210.0	5.0	912.3
14:30	5.5	100.0	0.0	210.0	4.4	912.2
14:40	5.5	100.0	0.0	210.0	4.7	912.2
14:50	5.6	100.0	0.0	200.0	4.3	912.1
15:00	5.6	100.0	0.0	210.0	4.4	912.0
15:10	5.6	100.0	0.0	210.0	4.6	912.0
15:20	5.6	100.0	0.0	210.0	4.6	912.0
15:30	5.6	100.0	0.0	210.0	4.6	912.0
15:40	5.6	100.0	0.0	210.0	4.1	911.9
15:50	5.6	100.0	0.0	210.0	5.4	911.8
16:00	5.4	100.0	0.0	210.0	5.3	911.8
16:10	5.3	100.0	0.0	210.0	4.0	911.7
16:20	5.4	100.0	0.0	210.0	4.0	911.7
16:30	5.5	100.0	0.0	210.0	4.1	911.7
16:40	5.5	100.0	0.0	210.0	4.0	911.7
16:50	5.5	100.0	0.0	200.0	4.6	911.7
17:00	5.5	100.0	0.0	200.0	4.2	911.6
17:10	5.5	100.0	0.0	210.0	4.0	911.7
17:20	5.5	100.0	0.0	200.0	4.0	911.7
17:30	5.5	100.0	0.0	210.0	3.8	911.7
17:40	5.5	100.0	0.0	200.0	4.3	911.5
17:50	5.6	100.0	0.0	200.0	4.1	911.4
18:00	5.6	100.0	0.0	200.0	5.0	911.4
18:10	5.6	100.0	0.0	200.0	5.2	911.3
18:20	5.6	100.0	0.0	200.0	4.6	911.3
18:30	5.5	100.0	0.0	200.0	4.9	911.2
18:40	5.5	100.0	0.0	200.0	5.1	911.1
18:50	5.4	100.0	0.0	210.0	6.0	911.0
19:00	5.4	100.0	0.0	210.0	5.9	910.9
19:10	5.3	100.0	0.0	210.0	5.5	911.0
19:20	5.1	100.0	0.0	210.0	7.1	911.0
19:30	5.1	100.0	0.0	210.0	6.5	911.0
19:40	5.1	100.0	0.0	210.0	6.4	910.9
19:50	5.1	100.0	0.0	210.0	6.8	910.9
20:00	5.2	100.0	0.0	210.0	6.6	910.8
20:10	5.4	100.0	0.0	210.0	7.1	910.7
20:20	5.5	100.0	0.0	220.0	7.6	910.6
20:30	5.6	100.0	0.0	210.0	7.6	910.7
20:40	5.6	100.0	0.0	220.0	7.7	910.7
20:50	5.7	100.0	0.0	210.0	8.0	910.7
21:00	5.8	100.0	0.0	220.0	8.4	910.7
21:10	5.9	100.0	0.0	220.0	9.1	910.7
21:20	5.9	100.0	0.0	210.0	8.9	910.7
21:30	5.9	100.0	0.0	210.0	9.0	910.7
21:40	6.0	100.0	0.0	210.0	8.6	910.6
21:50	6.1	100.0	0.0	210.0	9.0	910.7
22:00	6.1	100.0	0.0	210.0	8.1	910.6
22:10	6.2	100.0	0.0	210.0	8.8	910.6
22:20	6.2	100.0	0.0	210.0	8.7	910.5
22:30	6.2	100.0	0.0	210.0	9.7	910.4
22:40	6.3	100.0	0.0	210.0	10.4	910.3
22:50	6.4	100.0	0.0	210.0	10.6	910.2
23:00	6.2	100.0	0.0	210.0	10.5	910.3
23:10	6.3	100.0	0.0	210.0	10.3	910.2
23:20	6.3	100.0	0.0	210.0	10.0	910.2
23:30	6.3	100.0	0.0	210.0	9.9	910.1
23:40	6.2	100.0	0.0	210.0	8.7	909.9
23:50	6.3	100.0	0.0	210.0	8.4	909.8

H: The cloud event 26/27-10-2001

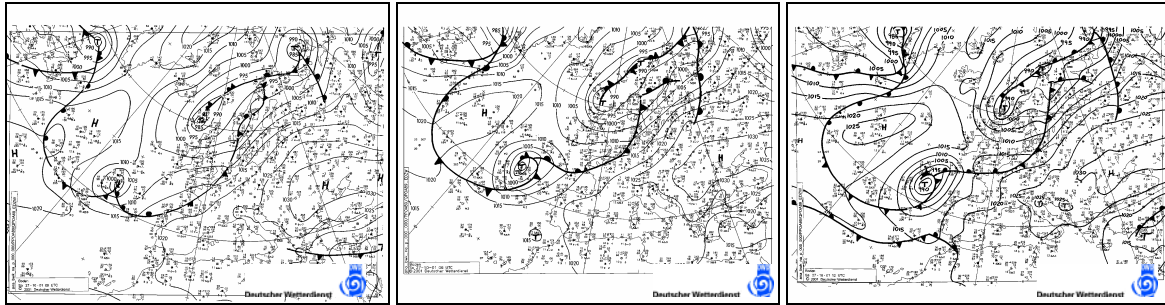


Fig. H1: Surface weather charts on 27 October 2001, 00, 06 and 12 UTC (source: DWD).

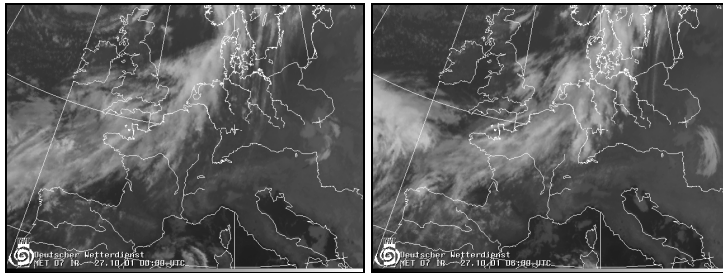


Fig. H2: IR-satellite picture on 27 October 2001, 00 and 06 UTC (source: DWD).

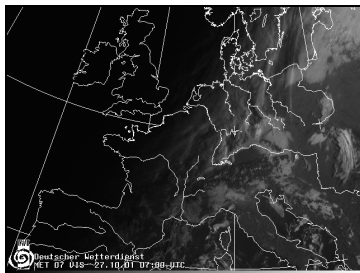


Fig. H3: VIS-satellite picture on 27 October 2001, 07 UTC (source: DWD).

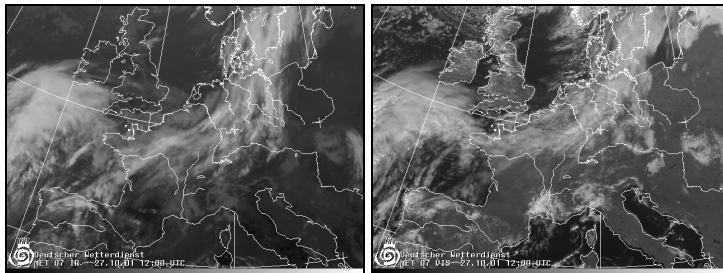


Fig. H4: IR and VIS-satellite pictures on 27 October 2001, 12 UTC (source: DWD).

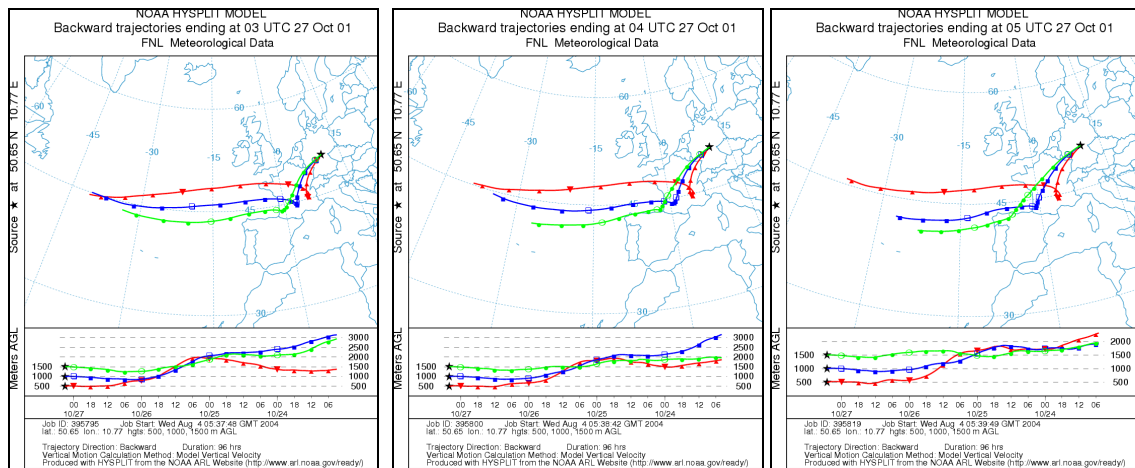


Fig. H8: Backward trajectories on 27 October 2001, 03, 04, and 05 UTC (source: NOAA ARL Website).

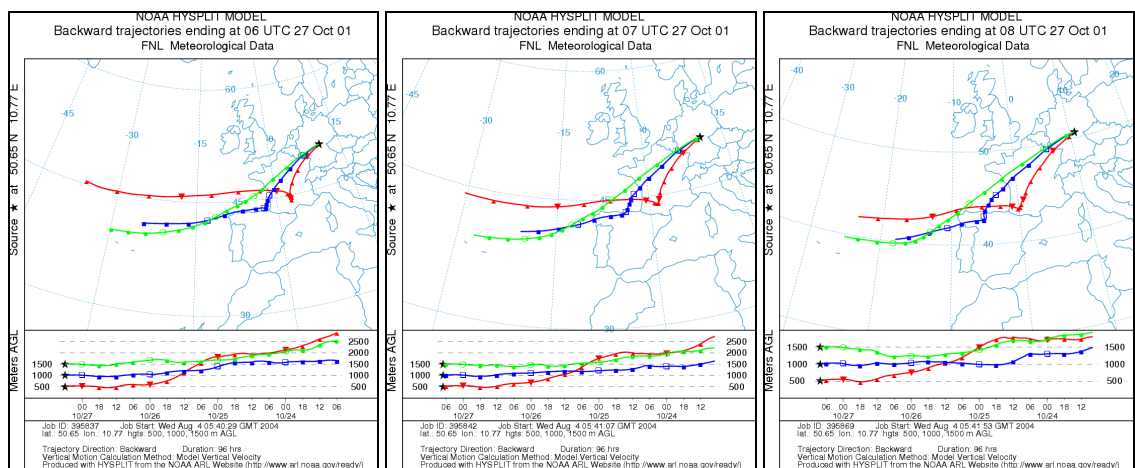


Fig. H9: Backward trajectories on 27 October 2001, 06, 07, and 08 UTC (source: NOAA ARL Website).

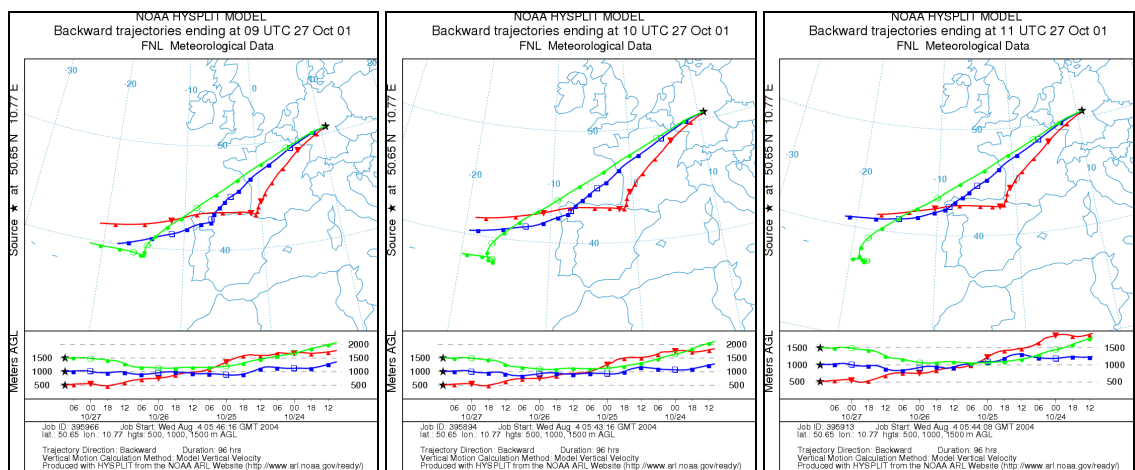


Fig. H10: Backward trajectories on 27 October 2001, 09, 10, and 11 UTC (source: NOAA ARL Website).

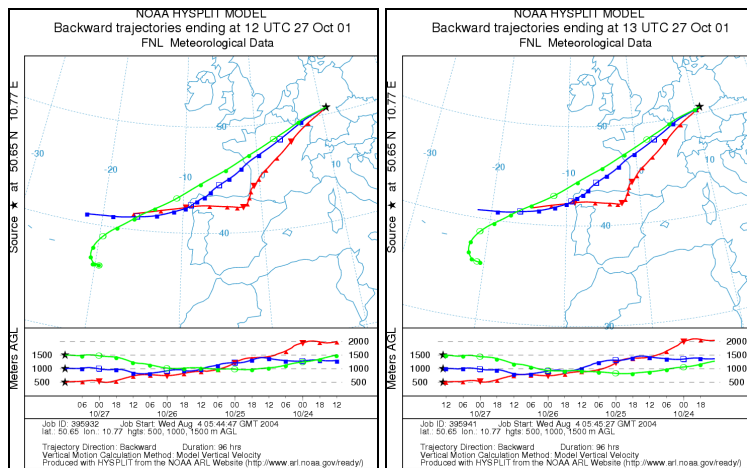


Fig. H11: Backward trajectories on 27 October 2001, 12 and 13 UTC (source: NOAA ARL Website).

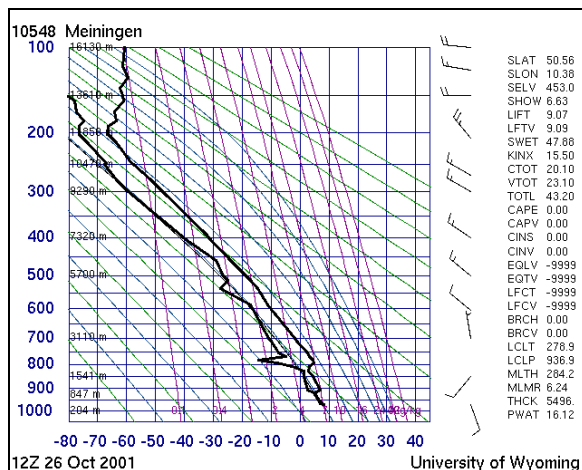


Fig. H12: Vertical rawinsonde profile of temperature and dew-point temperature on 26 October 2001, 12 UTC (source: University of Wyoming).

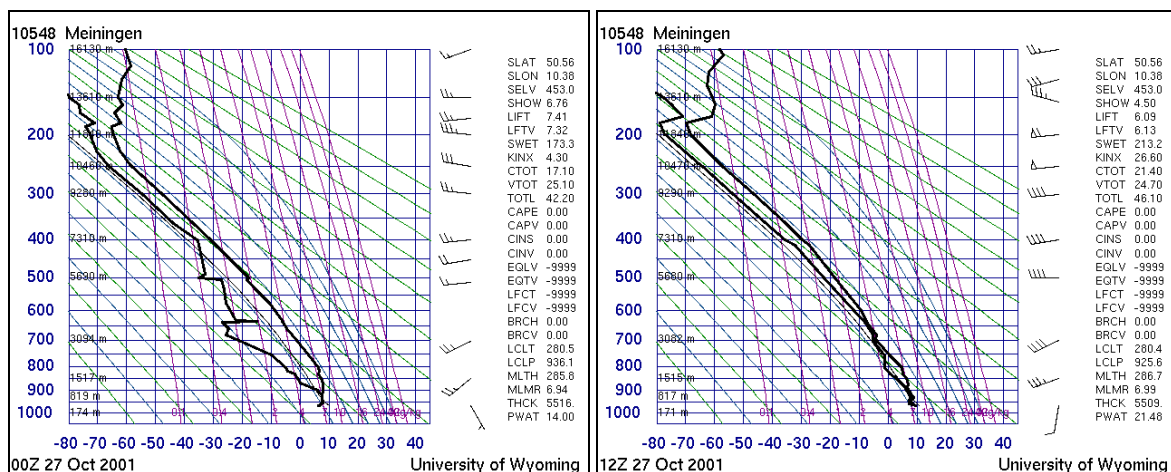


Fig. H13: Vertical rawinsonde profile of temperature and dew-point temperature on 27 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table H1: Locally measured meteorological data at the summit station Schmücke on 27 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	6.1	100.0	0.0	220.0	9.5	909.6
0:10	6.1	100.0	0.0	210.0	10.1	909.6
0:20	6.0	100.0	0.0	220.0	9.7	909.7
0:30	6.1	100.0	0.0	220.0	9.8	909.6
0:40	6.0	100.0	0.0	220.0	10.9	909.7
0:50	6.0	100.0	0.0	220.0	9.1	909.6
1:00	6.0	100.0	0.0	220.0	9.0	909.6
1:10	6.0	100.0	0.0	210.0	8.8	909.6
1:20	5.9	100.0	0.0	210.0	9.0	909.6
1:30	5.9	100.0	0.0	220.0	9.1	909.5
1:40	5.8	100.0	0.0	210.0	8.6	909.5
1:50	5.7	100.0	0.0	210.0	7.8	909.4
2:00	5.7	100.0	0.0	210.0	7.7	909.3
2:10	5.6	100.0	0.0	210.0	7.0	909.2
2:20	5.6	100.0	0.0	210.0	6.9	909.2
2:30	5.5	100.0	0.0	210.0	6.9	909.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
2:40	5.6	100.0	0.0	210.0	7.0	909.1
2:50	5.6	100.0	0.0	210.0	7.6	909.3
3:00	5.5	100.0	0.0	210.0	6.6	909.2
3:10	5.5	100.0	0.0	210.0	6.7	909.2
3:20	5.6	100.0	0.0	220.0	6.7	909.3
3:30	5.6	100.0	0.0	220.0	6.7	909.3
3:40	5.6	100.0	0.0	210.0	6.3	909.3
3:50	5.5	100.0	0.0	210.0	7.9	909.2
4:00	5.6	100.0	0.0	220.0	8.5	909.2
4:10	5.6	100.0	0.0	220.0	8.8	909.0
4:20	5.5	100.0	0.0	220.0	8.5	909.1
4:30	5.5	100.0	0.0	220.0	9.1	909.1
4:40	5.4	100.0	0.0	230.0	9.1	909.2
4:50	5.5	100.0	0.0	230.0	8.3	909.0
5:00	5.5	100.0	0.0	230.0	8.5	909.1
5:10	5.5	100.0	0.0	230.0	8.6	909.1
5:20	5.5	100.0	0.0	230.0	8.0	909.1
5:30	5.6	100.0	0.0	220.0	7.6	909.1
5:40	5.7	100.0	0.0	220.0	6.9	909.0
5:50	5.8	100.0	0.0	230.0	7.1	909.0
6:00	5.8	100.0	0.0	220.0	6.4	909.1
6:10	5.9	100.0	0.0	220.0	6.7	909.2
6:20	6.0	100.0	0.0	220.0	6.9	909.2
6:30	5.9	100.0	0.0	210.0	7.5	909.3
6:40	5.9	100.0	0.0	210.0	8.1	909.3
6:50	5.8	100.0	0.0	210.0	8.1	909.4
7:00	5.9	100.0	0.0	220.0	7.1	909.5
7:10	5.7	100.0	0.0	210.0	7.6	909.7
7:20	5.6	100.0	0.0	210.0	7.1	909.9
7:30	5.6	100.0	0.0	210.0	7.1	910.0
7:40	5.5	100.0	0.0	210.0	6.6	910.1
7:50	5.6	100.0	0.0	220.0	5.8	910.2
8:00	5.7	100.0	0.0	220.0	7.2	910.2
8:10	5.8	100.0	0.0	220.0	5.1	910.2
8:20	5.8	100.0	0.0	210.0	5.6	910.1
8:30	5.8	100.0	0.0	210.0	6.1	910.1
8:40	5.8	100.0	0.0	210.0	5.9	910.3
8:50	6.0	100.0	0.0	220.0	5.6	910.4
9:00	6.1	100.0	0.0	220.0	6.0	910.4
9:10	6.2	100.0	0.0	220.0	6.5	910.4
9:20	6.1	100.0	0.0	220.0	7.6	910.3
9:30	6.1	100.0	0.0	220.0	7.0	910.3
9:40	6.2	100.0	0.0	220.0	8.1	910.3
9:50	6.1	100.0	0.0	220.0	8.1	910.3
10:00	6.1	100.0	0.0	220.0	8.1	910.4
10:10	6.1	100.0	0.0	220.0	8.0	910.3
10:20	6.2	100.0	0.0	220.0	7.5	910.3
10:30	6.3	100.0	0.0	220.0	7.9	910.2
10:40	6.5	100.0	0.0	230.0	7.4	910.2
10:50	6.8	100.0	0.0	220.0	7.8	910.2
11:00	6.9	100.0	0.0	220.0	8.3	910.2
11:10	6.9	100.0	0.0	220.0	8.4	910.2
11:20	6.9	100.0	0.0	220.0	9.0	910.2
11:30	7.0	100.0	0.0	220.0	8.4	910.1
11:40	7.1	100.0	0.0	220.0	8.7	910.1
11:50	7.1	100.0	0.0	220.0	7.6	910.1
12:00	7.1	100.0	0.0	220.0	6.4	910.1
12:10	7.1	100.0	0.0	220.0	6.9	910.0
12:20	7.2	100.0	0.0	220.0	6.8	910.0
12:30	7.4	100.0	0.0	210.0	9.1	909.9
12:40	7.4	100.0	0.0	210.0	9.5	909.9
12:50	7.4	100.0	0.0	210.0	9.5	909.9
13:00	7.5	100.0	0.3	210.0	9.6	909.8
13:10	7.5	100.0	0.9	210.0	9.8	909.7
13:20	7.5	100.0	0.9	210.0	10.1	909.7
13:30	7.5	100.0	0.6	210.0	9.1	909.7
13:40	7.6	100.0	0.4	210.0	8.7	909.7
13:50	7.6	100.0	0.6	210.0	8.7	909.7
14:00	7.7	100.0	0.6	210.0	8.3	909.7
14:10	7.7	100.0	0.7	210.0	8.9	909.8
14:20	7.7	100.0	0.5	210.0	9.0	909.9
14:30	7.8	100.0	0.1	210.0	9.2	909.8
14:40	7.9	100.0	0.1	210.0	7.9	909.8
14:50	7.9	100.0	0.1	210.0	8.8	909.8
15:00	8.0	100.0	0.0	210.0	8.8	909.8
15:10	8.0	100.0	0.5	220.0	8.1	909.9
15:20	8.0	100.0	5.6	220.0	7.2	910.1
15:30	8.0	100.0	1.4	220.0	6.4	910.2
15:40	8.0	100.0	0.4	220.0	6.3	910.3
15:50	8.0	100.0	0.8	220.0	6.8	910.4
16:00	8.0	100.0	2.1	230.0	5.8	910.4
16:10	8.0	100.0	8.0	230.0	5.3	910.5
16:20	8.0	100.0	4.3	230.0	5.5	910.6
16:30	7.9	100.0	2.7	230.0	6.4	910.6
16:40	7.9	100.0	2.9	230.0	5.2	910.8
16:50	7.9	100.0	2.3	230.0	4.8	910.8
17:00	7.9	100.0	0.6	230.0	5.4	910.9
17:10	7.8	100.0	0.3	230.0	5.4	911.0
17:20	7.8	100.0	0.1	240.0	5.3	911.2
17:30	7.8	100.0	0.2	240.0	5.0	911.3
17:40	7.7	100.0	0.1	240.0	5.6	911.4
17:50	7.7	100.0	0.4	230.0	5.3	911.5
18:00	7.6	100.0	0.1	240.0	5.0	911.6
18:10	7.4	100.0	0.2	250.0	5.6	911.7
18:20	7.4	100.0	0.1	240.0	5.3	911.7
18:30	7.3	100.0	0.1	250.0	5.3	911.9
18:40	7.2	100.0	0.0	250.0	4.2	911.9
18:50	7.1	100.0	0.0	240.0	5.0	911.9
19:00	7.0	100.0	0.0	250.0	5.0	911.9
19:10	6.9	100.0	0.0	250.0	4.6	912.0
19:20	7.0	100.0	0.0	250.0	3.4	912.1
19:30	7.0	100.0	0.0	230.0	3.3	912.3
19:40	6.9	100.0	0.0	240.0	3.8	912.3
19:50	6.8	100.0	0.0	240.0	4.4	912.4
20:00	6.8	100.0	0.0	240.0	4.0	912.5
20:10	6.7	100.0	0.1	240.0	4.2	912.6
20:20	6.7	100.0	0.0	230.0	4.5	912.7
20:30	6.8	100.0	0.0	230.0	4.8	912.7
20:40	6.8	100.0	0.0	230.0	4.2	912.7
20:50	6.7	100.0	0.0	240.0	4.1	912.7
21:00	6.7	100.0	0.0	240.0	4.3	912.7
21:10	6.6	100.0	0.0	240.0	4.9	912.6
21:20	6.6	100.0	0.0	240.0	4.7	912.8
21:30	6.5	100.0	0.0	240.0	4.9	912.7
21:40	6.5	100.0	0.0	250.0	4.7	912.7
21:50	6.5	100.0	0.0	240.0	4.5	912.8
22:00	6.4	100.0	0.0	240.0	4.7	912.8
22:10	6.4	100.0	0.0	250.0	4.8	912.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
22:20	6.3	100.0	0.0	240.0	4.4	912.8
22:30	6.3	100.0	0.0	230.0	3.9	912.7
22:40	6.2	100.0	0.0	230.0	3.8	912.7
22:50	6.2	100.0	0.0	230.0	4.0	912.8
23:00	6.2	100.0	0.0	230.0	3.8	912.9
23:10	6.2	100.0	0.0	240.0	3.7	913.0
23:20	6.2	100.0	0.0	230.0	3.9	913.0
23:30	6.2	100.0	0.0	240.0	4.3	913.1
23:40	6.1	100.0	0.0	230.0	3.5	913.1
23:50	6.2	100.0	0.0	240.0	3.6	913.1

I: The cloud event 29-10-2001

A frontal zone with zonal orientation can be found in the surface weather charts across North Germany for this short cloud event. A westerly to north-westerly flow was established between the British Isles and the experimental site under the influence of high pressure over wide parts of France and the Mediterranean Sea and a trough of Icelandic low pressure. While the course of backward trajectories also represents the orientation of the synoptic flow, the locally measured wind direction was southwest. There are no satellite pictures at all during the event but the satellite image from 12:00 UTC shows large-scale cloudiness, obviously it was a stratus bank. Particularly, with regard to the short episode with measurements this period it was not useful for further considerations.

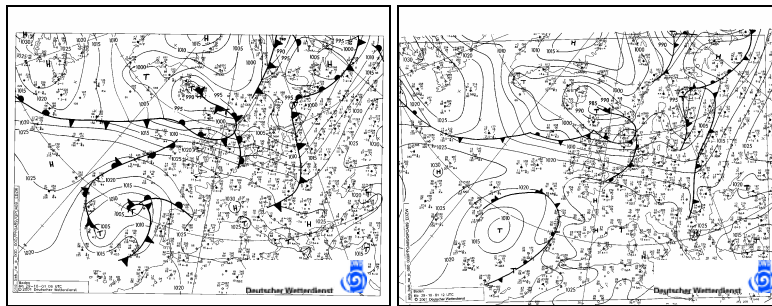


Fig. I1: Surface weather charts on 29 October 2001, 06 and 12 UTC (source: DWD).

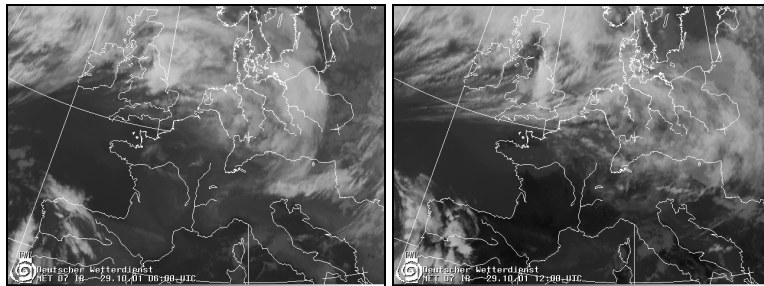


Fig. I2: IR-satellite pictures on 29 October 2001, 06 and 12 UTC (source: DWD).

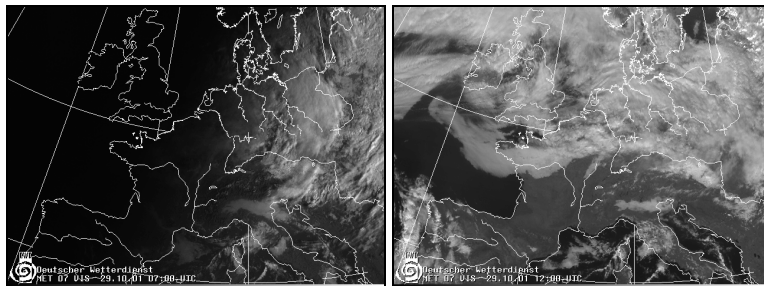


Fig. I3: VIS-satellite pictures on 29 October 2001, 07 and 12 UTC (source: DWD).

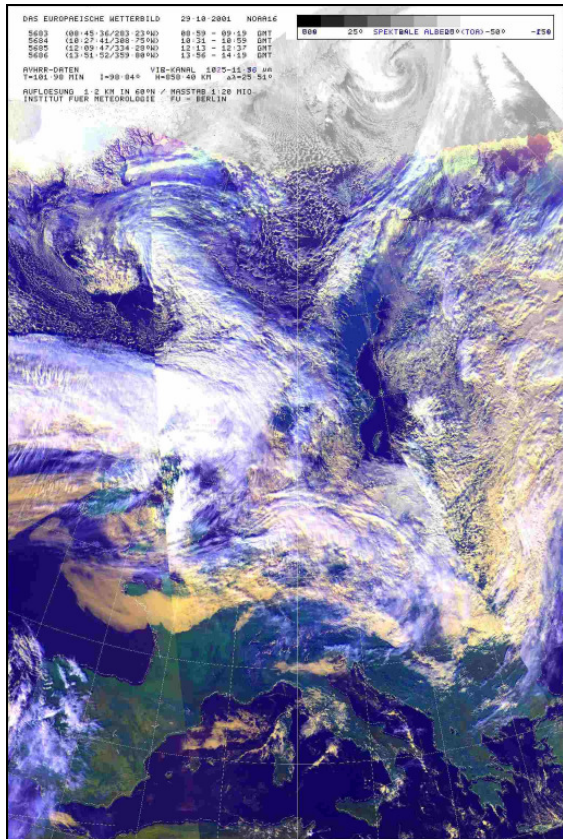


Fig. I4: NOAA satellite picture on 29 October 2001 (source: Berliner Wetterkarte, 2001).

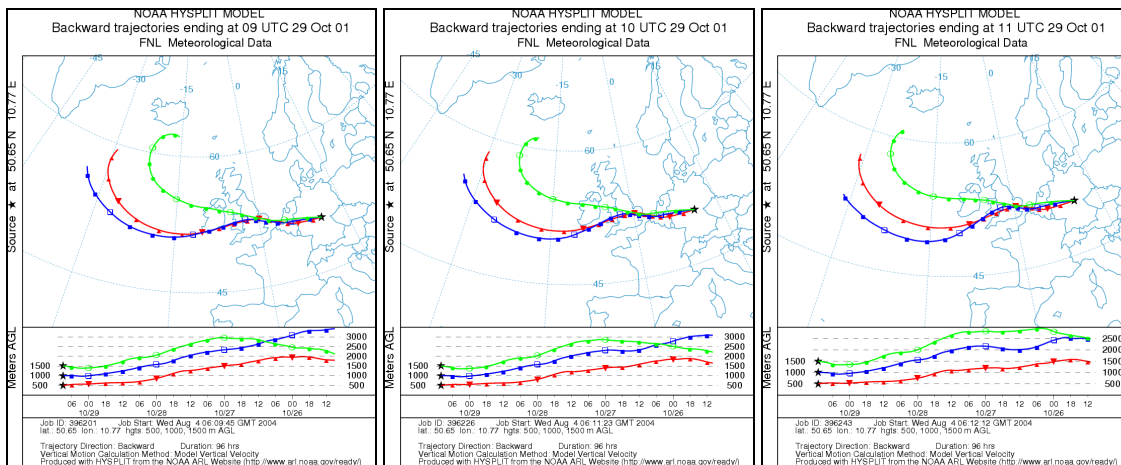


Fig. I5: Backward trajectories on 29 October 2001, 09, 10, and 11 UTC (source: NOAA ARL Website).

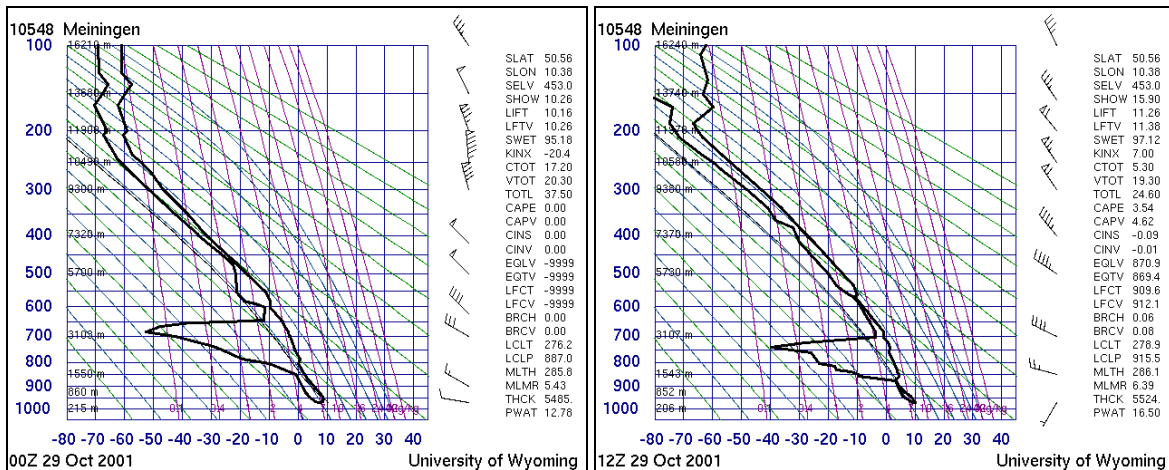


Fig. I6: Vertical rawinsonde profile of temperature and dew-point temperature on 29 October 2001, 00 and 12 UTC (source: University of Wyoming).

Table 11: Locally measured meteorological data at the summit station Schmücke on 26 October 2001 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	4.8	100.0	0.0	270.0	4.2	915.0
0:10	4.8	100.0	0.0	270.0	4.4	915.1
0:20	4.7	99.0	0.0	260.0	4.3	914.9
0:30	4.7	99.0	0.0	260.0	4.5	914.7
0:40	4.8	100.0	0.0	260.0	4.2	914.8
0:50	4.8	100.0	0.0	260.0	4.1	914.7
1:00	4.7	99.0	0.0	250.0	4.6	914.7
1:10	4.7	99.0	0.0	250.0	4.8	914.7
1:20	4.7	99.0	0.0	260.0	4.5	914.7
1:30	4.6	99.0	0.0	250.0	4.8	914.6
1:40	4.6	99.0	0.0	250.0	5.3	914.6
1:50	4.6	99.0	0.0	250.0	5.1	914.6
2:00	4.5	99.0	0.0	250.0	5.1	914.5
2:10	4.5	99.0	0.0	250.0	5.5	914.4
2:20	4.4	99.0	0.0	250.0	6.0	914.3
2:30	4.3	99.0	0.0	250.0	6.6	914.0
2:40	4.2	99.0	0.0	250.0	6.4	914.1
2:50	4.2	99.0	0.0	250.0	6.5	914.1
3:00	4.2	99.0	0.0	250.0	5.5	914.1
3:10	4.1	99.0	0.0	250.0	5.7	914.0
3:20	4.1	99.0	0.0	250.0	5.8	914.1
3:30	4.1	99.0	0.0	250.0	6.3	914.1
3:40	4.1	99.0	0.0	250.0	6.0	914.1
3:50	4.0	99.0	0.0	250.0	6.5	914.0
4:00	4.0	99.0	0.0	250.0	5.8	914.0
4:10	4.0	99.0	0.0	250.0	6.0	914.0
4:20	4.0	99.0	0.0	240.0	6.1	914.0
4:30	4.0	99.0	0.0	240.0	6.3	913.8
4:40	4.0	99.0	0.0	240.0	5.6	913.9
4:50	3.9	99.0	0.0	240.0	6.0	913.8
5:00	3.9	99.0	0.0	240.0	6.1	913.9
5:10	3.9	99.0	0.0	240.0	5.8	913.9
5:20	3.9	99.0	0.0	240.0	6.1	913.8
5:30	3.8	99.0	0.0	230.0	5.9	913.7
5:40	3.8	99.0	0.0	230.0	5.7	913.6
5:50	3.8	99.0	0.0	230.0	6.1	913.4
6:00	3.8	99.0	0.0	230.0	7.0	913.4
6:10	3.8	99.0	0.0	230.0	6.8	913.4
6:20	3.8	99.0	0.0	230.0	6.1	913.6
6:30	3.8	99.0	0.0	230.0	6.0	913.7
6:40	3.8	99.0	0.0	230.0	6.7	913.8
6:50	3.9	99.0	0.0	230.0	7.0	914.0
7:00	3.9	99.0	0.0	230.0	6.2	914.1
7:10	3.9	99.0	0.0	230.0	6.1	914.1
7:20	3.8	99.0	0.0	230.0	6.7	914.2
7:30	3.8	99.0	0.0	230.0	6.1	914.2
7:40	3.8	99.0	0.0	230.0	6.3	914.2
7:50	3.9	99.0	0.0	230.0	6.1	914.3
8:00	3.9	99.0	0.0	230.0	6.0	914.2
8:10	3.9	99.0	0.0	230.0	6.2	914.2
8:20	4.0	99.0	0.0	230.0	5.8	914.0
8:30	4.1	99.0	0.0	230.0	6.0	914.1
8:40	4.1	99.0	0.0	230.0	6.4	913.7
8:50	4.1	99.0	0.0	230.0	7.7	913.7
9:00	4.2	99.0	0.0	230.0	7.2	913.6
9:10	4.2	99.0	0.0	230.0	7.3	913.6
9:20	4.2	99.0	0.0	240.0	7.0	913.7
9:30	4.3	99.0	0.0	240.0	6.4	913.7
9:40	4.4	99.0	0.0	240.0	7.1	913.6
9:50	4.6	99.0	0.0	240.0	6.4	913.7
10:00	4.7	99.0	0.0	250.0	6.6	913.6
10:10	4.8	100.0	0.0	240.0	5.4	913.7
10:20	4.8	100.0	0.0	240.0	5.5	913.7
10:30	5.0	100.0	0.0	240.0	5.6	913.6
10:40	5.0	100.0	0.0	250.0	6.0	913.8
10:50	5.1	100.0	0.0	250.0	6.8	913.7
11:00	5.2	100.0	0.0	250.0	6.8	913.4
11:10	5.3	100.0	0.0	240.0	6.3	913.2
11:20	5.4	100.0	0.0	240.0	6.1	913.0
11:30	5.4	100.0	0.0	240.0	5.9	912.9
11:40	5.5	100.0	0.0	240.0	6.7	912.8
11:50	5.7	100.0	0.0	240.0	7.3	912.8
12:00	5.8	100.0	0.0	240.0	7.4	912.8
12:10	6.0	100.0	0.0	240.0	6.7	912.8
12:20	6.1	100.0	0.0	240.0	6.1	912.7
12:30	6.1	100.0	0.0	230.0	7.0	912.5
12:40	6.2	100.0	0.0	240.0	7.1	912.7
12:50	6.1	100.0	0.0	230.0	7.3	912.6
13:00	6.3	100.0	0.0	240.0	7.0	912.5
13:10	6.1	100.0	0.0	230.0	7.9	912.4
13:20	6.1	100.0	0.0	230.0	7.8	912.4
13:30	6.1	100.0	0.0	240.0	7.2	912.5
13:40	6.0	100.0	0.0	240.0	7.1	912.4
13:50	5.9	100.0	0.0	240.0	6.6	912.4
14:00	5.9	100.0	0.0	240.0	6.7	912.3
14:10	5.9	100.0	0.0	240.0	7.8	912.2
14:20	5.9	100.0	0.0	230.0	7.7	912.3
14:30	5.9	100.0	0.0	230.0	8.0	912.1
14:40	5.8	100.0	0.0	230.0	8.2	912.1
14:50	5.8	100.0	0.0	230.0	7.1	912.0
15:00	5.8	100.0	0.0	230.0	7.7	912.0
15:10	5.8	100.0	0.0	230.0	8.5	912.0
15:20	5.8	100.0	0.4	230.0	8.1	911.8
15:30	5.7	100.0	0.4	240.0	8.5	911.9
15:40	5.6	100.0	0.1	230.0	8.7	911.9
15:50	5.6	100.0	0.1	230.0	8.9	911.8
16:00	5.6	100.0	0.0	240.0	8.8	911.7
16:10	5.6	100.0	0.0	230.0	9.0	911.6
16:20	5.6	100.0	0.0	240.0	8.2	911.7
16:30	5.6	100.0	0.0	240.0	8.6	911.6
16:40	5.6	100.0	0.1	240.0	8.2	911.6
16:50	5.6	100.0	0.0	230.0	9.1	911.6
17:00	5.6	100.0	0.0	240.0	8.2	911.9
17:10	5.6	100.0	0.0	240.0	7.3	911.9
17:20	5.7	100.0	0.0	230.0	7.9	911.9
17:30	5.7	100.0	0.0	240.0	8.5	911.8
17:40	5.7	100.0	0.0	230.0	8.2	911.9
17:50	5.8	100.0	0.0	240.0	7.9	912.1
18:00	5.9	100.0	0.0	240.0	8.7	912.2
18:10	5.9	100.0	0.0	240.0	9.0	911.8
18:20	6.0	100.0	0.0	240.0	9.2	912.1
18:30	6.1	100.0	0.0	240.0	8.4	912.0
18:40	6.1	100.0	0.0	240.0	9.0	911.7
18:50	6.2	100.0	0.0	240.0	9.4	911.7

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
19:00	6.3	100.0	0.0	240.0	9.3	911.7
19:10	6.2	100.0	0.0	240.0	8.3	911.9
19:20	6.2	100.0	0.0	240.0	8.1	911.9
19:30	6.1	100.0	0.0	240.0	7.8	912.0
19:40	6.2	100.0	0.0	240.0	8.9	911.9
19:50	6.2	100.0	0.0	250.0	9.5	912.0
20:00	6.2	100.0	0.0	240.0	9.0	912.0
20:10	6.2	100.0	0.0	240.0	7.8	911.8
20:20	6.1	100.0	0.0	240.0	7.6	911.6
20:30	6.1	100.0	0.0	230.0	8.8	911.5
20:40	6.1	100.0	0.0	230.0	9.0	911.5
20:50	6.1	100.0	0.0	230.0	9.0	911.4
21:00	6.1	100.0	0.0	230.0	9.9	911.2
21:10	6.1	100.0	0.0	230.0	8.6	911.4
21:20	6.1	100.0	0.0	240.0	9.0	911.4
21:30	6.0	100.0	0.0	230.0	9.0	911.3
21:40	6.0	100.0	0.0	240.0	8.7	911.4
21:50	5.9	100.0	0.0	240.0	8.5	911.5
22:00	5.8	100.0	0.0	240.0	8.9	911.4
22:10	5.8	100.0	0.0	240.0	8.4	911.4
22:20	5.8	100.0	0.0	230.0	8.1	911.3
22:30	5.8	100.0	0.0	230.0	8.5	911.5
22:40	5.7	100.0	0.0	230.0	8.2	911.1
22:50	5.6	100.0	0.0	230.0	8.4	910.9
23:00	5.5	100.0	0.0	230.0	9.1	910.9
23:10	5.3	100.0	0.0	230.0	9.3	910.9
23:20	5.2	100.0	0.0	240.0	10.2	910.9
23:30	5.1	100.0	0.0	250.0	11.5	910.9
23:40	5.0	100.0	0.0	240.0	11.6	910.8
23:50	4.9	100.0	0.0	240.0	10.5	910.7

J: The cloud event 03-10-2002

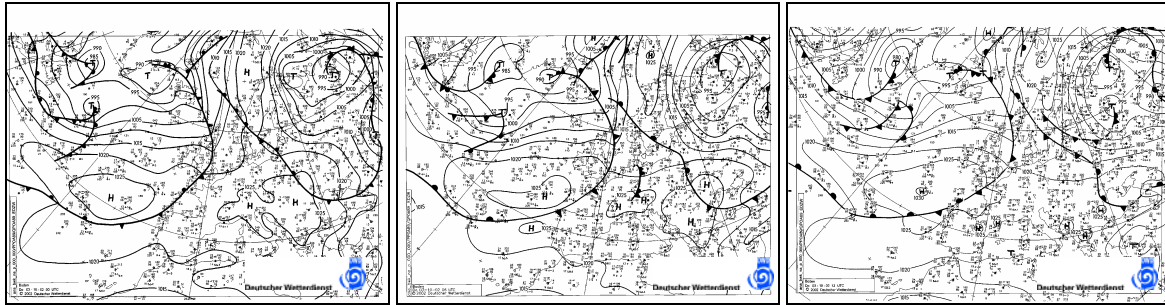


Fig. J1: Surface weather charts on 03 October 2002, 00, 06, and 12 UTC (source: DWD).

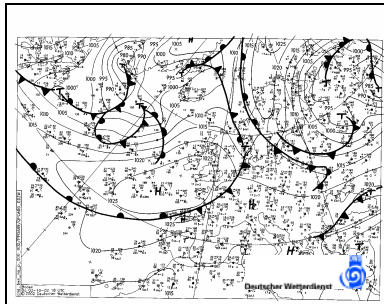


Fig. J2: Surface weather chart on 03 October 2002, 18 UTC (source: DWD).

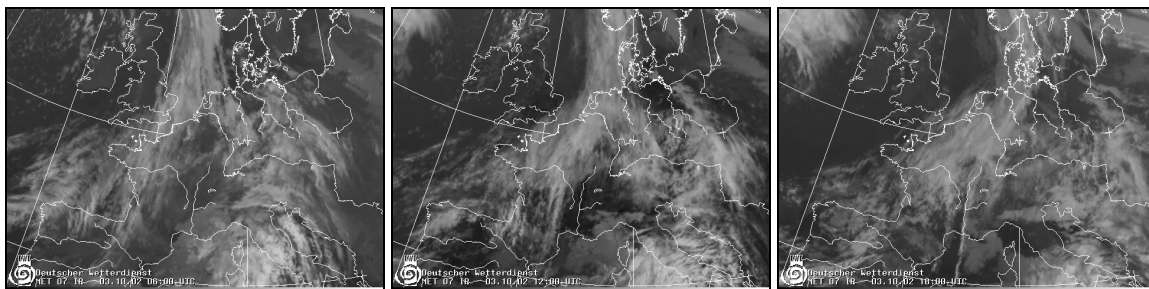


Fig. J3: IR-satellite pictures on 03 October 2002, 06, 12, and 18 UTC (source: DWD).

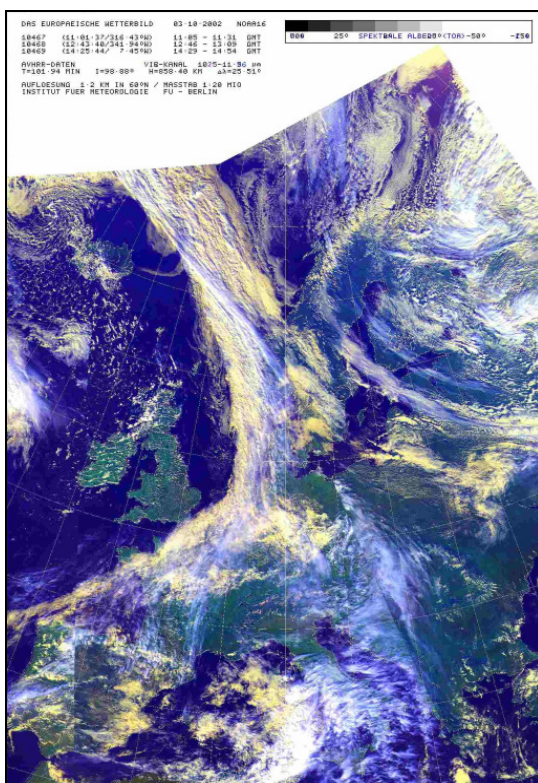


Fig. J4: NOAA satellite picture on 03 October 2002 (source: Berliner Wetterkarte, 2001).

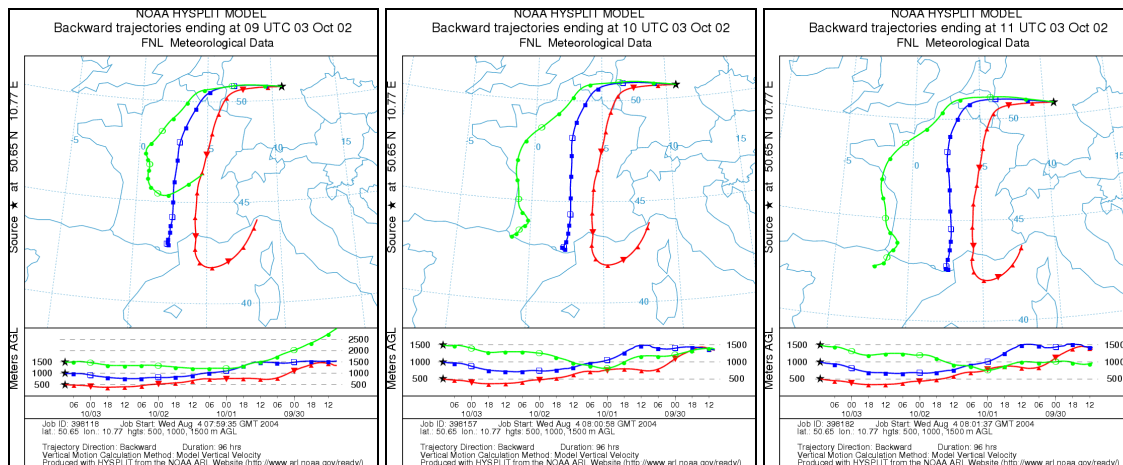


Fig. J5: Backward trajectories on 03 October 2002, 09, 10, and 11 UTC (source: NOAA ARL Website).

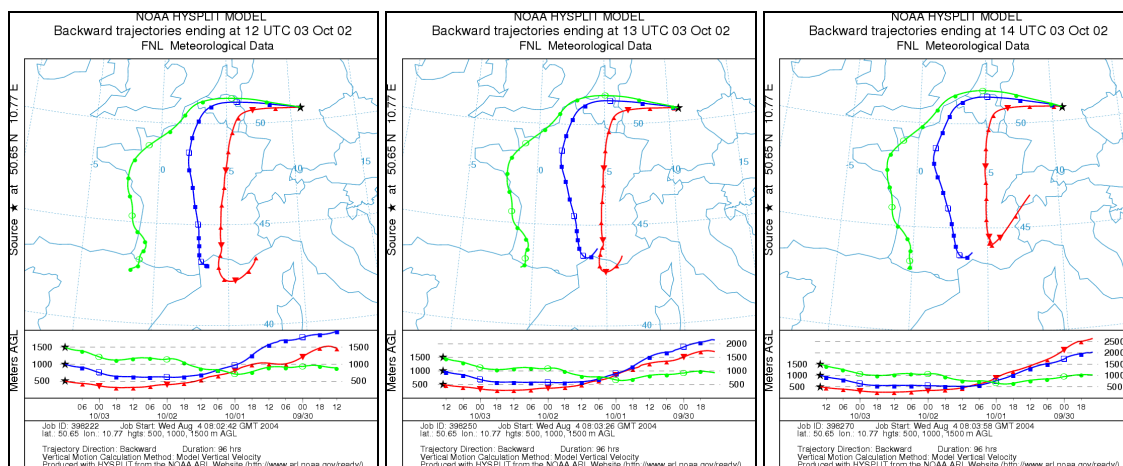


Fig. J6: Backward trajectories on 03 October 2002, 12, 13, and 14 UTC (source: NOAA ARL Website).

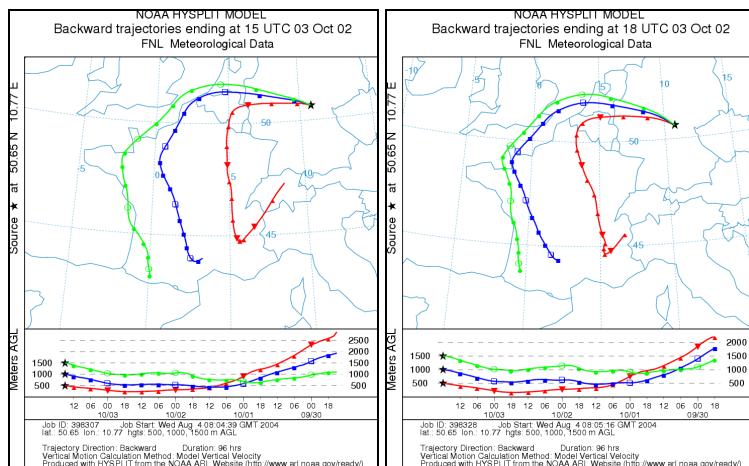


Fig. J7: Backward trajectories on 03 October 2002, 15 and 18 UTC (source: NOAA ARL Website).

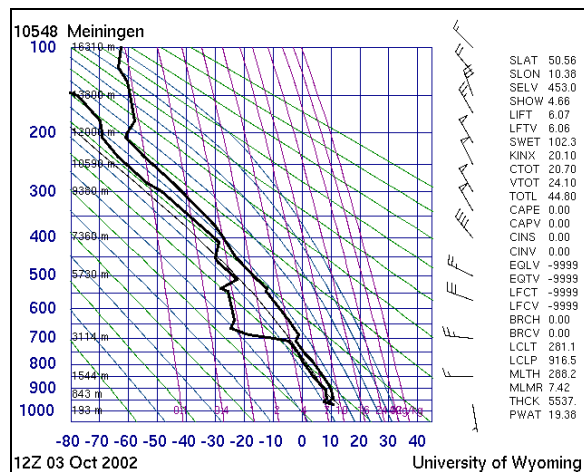


Fig. J8: Vertical rawinsonde profile of temperature and dew-point temperature on 03 October 2002, 12 UTC (source: University of Wyoming).

Table J1: Locally measured meteorological data at the summit station Schmücke on 03 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	8.1	97.0	0.00	230.0	5.9	913.4
0:10	8.0	96.0	0.00	230.0	5.0	913.5
0:20	8.0	95.0	0.00	230.0	4.7	913.4
0:30	8.0	95.0	0.00	230.0	4.4	913.4
0:40	7.9	95.0	0.00	230.0	3.8	913.4
0:50	7.9	95.0	0.00	240.0	3.6	913.3
1:00	7.9	94.0	0.00	230.0	2.8	913.2
1:10	7.8	94.0	0.00	230.0	3.4	913.1
1:20	7.7	95.0	0.00	230.0	4.2	913.1
1:30	7.7	95.0	0.00	230.0	4.4	913.0
1:40	7.8	94.0	0.00	230.0	4.4	913.0
1:50	7.8	94.0	0.00	230.0	4.5	913.0
2:00	7.7	95.0	0.00	230.0	4.7	912.9
2:10	7.6	94.0	0.00	240.0	4.4	912.9
2:20	7.6	94.0	0.00	240.0	4.6	912.8
2:30	7.5	94.0	0.00	240.0	4.5	912.9
2:40	7.5	95.0	0.00	240.0	4.3	912.8
2:50	7.3	96.0	0.00	240.0	4.3	912.8
3:00	7.4	96.0	0.00	240.0	4.6	912.8
3:10	7.5	96.0	0.00	230.0	4.7	912.8
3:20	7.4	97.0	0.00	240.0	4.2	912.8
3:30	7.4	97.0	0.00	240.0	4.0	912.9
3:40	7.6	97.0	0.00	240.0	4.1	912.9
3:50	7.5	97.0	0.00	240.0	4.2	912.8
4:00	7.4	97.0	0.00	240.0	4.6	912.7
4:10	7.3	97.0	0.00	240.0	5.0	912.7
4:20	7.3	98.0	0.00	240.0	4.8	912.7
4:30	7.2	98.0	0.00	240.0	4.2	912.6
4:40	7.2	100.0	0.00	230.0	4.4	912.6
4:50	7.2	100.0	0.00	240.0	4.5	912.5
5:00	7.3	100.0	0.00	240.0	4.5	912.5
5:10	7.3	100.0	0.00	240.0	4.6	912.5
5:20	7.4	100.0	0.00	240.0	5.1	912.4
5:30	7.4	100.0	0.00	240.0	5.7	912.4
5:40	7.5	100.0	0.00	230.0	5.5	912.4
5:50	7.5	100.0	0.00	230.0	5.2	912.4
6:00	7.5	100.0	0.00	240.0	4.6	912.5
6:10	7.6	100.0	0.00	240.0	4.9	912.5
6:20	7.7	100.0	0.00	240.0	5.4	912.5
6:30	7.9	100.0	0.00	230.0	6.1	912.6
6:40	8.0	100.0	0.00	230.0	5.3	912.6
6:50	7.9	100.0	0.00	230.0	4.8	912.6
7:00	8.1	100.0	0.00	240.0	4.8	912.7
7:10	8.2	100.0	0.00	250.0	4.2	912.8
7:20	8.3	100.0	0.00	240.0	4.5	912.8
7:30	8.2	100.0	0.00	230.0	4.4	912.9
7:40	7.9	100.0	0.02	230.0	4.7	912.9
7:50	7.8	100.0	0.32	230.0	4.6	913.0
8:00	7.9	100.0	0.05	230.0	4.0	912.9
8:10	7.8	100.0	0.00	230.0	4.3	912.9
8:20	7.8	100.0	0.01	230.0	4.8	912.9
8:30	7.9	100.0	0.00	230.0	4.5	913.0
8:40	8.4	100.0	0.00	240.0	4.4	913.0
8:50	8.6	100.0	0.00	240.0	4.0	913.1
9:00	8.4	100.0	0.00	230.0	4.0	913.2
9:10	8.4	100.0	0.00	230.0	2.8	913.2
9:20	8.5	100.0	0.00	240.0	2.4	913.2
9:30	8.3	100.0	0.00	230.0	2.8	913.3
9:40	8.3	100.0	0.00	240.0	3.1	913.3
9:50	8.3	100.0	0.00	240.0	2.7	913.2
10:00	8.4	100.0	0.00	240.0	3.2	913.2
10:10	8.4	100.0	0.00	240.0	2.6	913.3
10:20	8.5	100.0	0.00	240.0	3.0	913.3
10:30	8.5	100.0	0.00	230.0	2.8	913.3
10:40	8.4	100.0	0.00	230.0	3.0	913.3
10:50	8.5	100.0	0.00	230.0	4.2	913.0
11:00	8.6	100.0	0.00	230.0	4.6	913.0
11:10	8.6	100.0	0.00	230.0	4.6	912.9
11:20	8.6	100.0	0.00	230.0	4.8	912.8
11:30	8.8	100.0	0.00	240.0	4.1	912.9
11:40	8.9	100.0	0.00	240.0	3.6	912.9
11:50	8.8	100.0	0.00	230.0	3.7	912.8
12:00	8.8	100.0	0.00	240.0	3.9	912.7
12:10	8.6	100.0	0.00	230.0	3.9	912.6
12:20	8.6	100.0	0.00	240.0	4.1	912.6
12:30	8.7	100.0	0.18	240.0	4.2	912.7
12:40	8.8	100.0	0.08	240.0	3.7	912.7
12:50	9.0	100.0	0.01	230.0	3.3	912.6
13:00	9.1	100.0	0.01	240.0	3.1	912.6
13:10	9.1	100.0	0.00	240.0	3.6	912.5
13:20	9.1	100.0	0.00	240.0	4.0	912.4

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
13:30	9.1	100.0	0.00	240.0	3.6	912.5
13:40	9.0	100.0	0.00	240.0	3.5	912.4
13:50	8.9	100.0	0.00	240.0	3.0	912.4
14:00	8.9	100.0	0.00	230.0	3.1	912.4
14:10	8.7	100.0	0.00	220.0	3.0	912.4
14:20	8.7	100.0	0.00	230.0	2.8	912.5
14:30	8.7	100.0	0.00	240.0	2.5	912.5
14:40	8.7	100.0	0.00	240.0	2.3	912.4
14:50	8.8	100.0	0.16	240.0	2.3	912.4
15:00	8.8	100.0	0.20	240.0	2.9	912.4
15:10	8.8	100.0	0.09	230.0	3.3	912.3
15:20	8.9	100.0	0.11	240.0	2.9	912.4
15:30	8.9	100.0	0.11	250.0	3.4	912.3
15:40	9.0	100.0	0.05	260.0	4.2	912.2
15:50	9.1	100.0	0.03	250.0	3.7	912.2
16:00	9.2	100.0	0.01	250.0	3.5	912.2
16:10	9.1	100.0	0.02	240.0	2.6	912.2
16:20	9.1	100.0	0.04	250.0	3.5	912.2
16:30	9.2	100.0	0.13	250.0	3.9	912.2
16:40	9.2	100.0	0.11	260.0	3.8	912.3
16:50	9.3	100.0	0.10	260.0	3.8	912.2
17:00	9.3	100.0	0.03	250.0	4.0	912.3
17:10	9.2	100.0	0.01	240.0	3.7	912.3
17:20	9.2	100.0	0.00	250.0	3.9	912.3
17:30	9.4	100.0	0.01	250.0	5.6	912.2
17:40	9.4	100.0	0.01	250.0	5.0	912.3
17:50	9.5	100.0	0.00	260.0	4.5	912.3
18:00	9.5	100.0	0.00	250.0	4.1	912.3
18:10	9.5	100.0	0.19	260.0	4.4	912.3
18:20	9.5	100.0	0.10	260.0	4.2	912.3
18:30	9.5	100.0	0.06	250.0	4.0	912.3
18:40	9.6	100.0	0.09	260.0	4.7	912.3
18:50	9.6	100.0	0.10	260.0	3.7	912.4
19:00	9.7	100.0	0.08	260.0	3.8	912.4
19:10	9.6	100.0	0.06	260.0	3.4	912.5
19:20	9.7	100.0	0.06	260.0	4.1	912.6
19:30	9.7	100.0	0.02	260.0	3.9	912.6
19:40	9.7	100.0	0.00	270.0	4.1	912.7
19:50	9.7	100.0	0.00	270.0	4.3	912.7
20:00	9.7	100.0	0.01	270.0	4.0	912.7
20:10	9.7	100.0	0.00	260.0	3.6	912.8
20:20	9.7	100.0	0.00	260.0	4.3	912.8
20:30	9.8	100.0	0.00	260.0	3.5	912.8
20:40	9.8	100.0	0.00	270.0	3.4	912.8
20:50	9.8	100.0	0.00	270.0	3.3	912.8
21:00	9.8	100.0	0.00	260.0	3.6	912.8
21:10	9.8	100.0	0.01	260.0	3.7	912.8
21:20	9.8	100.0	0.00	260.0	4.1	912.8
21:30	9.8	100.0	0.00	260.0	4.0	912.7
21:40	9.8	100.0	0.00	260.0	3.2	912.7
21:50	9.8	100.0	0.00	250.0	3.2	912.6
22:00	9.8	100.0	0.00	250.0	3.8	912.7
22:10	9.8	100.0	0.00	250.0	3.6	912.6
22:20	9.8	100.0	0.00	230.0	2.8	912.5
22:30	9.7	100.0	0.00	240.0	2.4	912.5
22:40	9.7	100.0	0.00	240.0	2.5	912.4
22:50	9.7	100.0	0.00	240.0	2.8	912.3
23:00	9.7	100.0	0.01	240.0	3.3	912.2
23:10	9.7	100.0	0.08	250.0	3.8	912.2
23:20	9.7	100.0	0.40	250.0	4.1	912.3
23:30	9.7	100.0	0.19	240.0	3.4	912.3
23:40	9.7	100.0	0.07	240.0	3.2	912.3
23:50	9.7	100.0	0.24	250.0	3.2	912.2

K: The cloud event (14-16)-10-2002

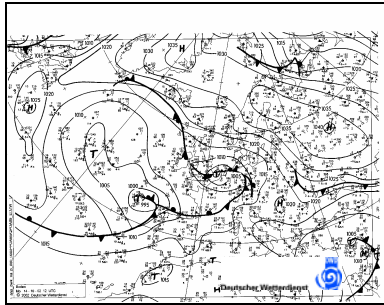


Fig. K1: Surface weather chart on 14 October 2002, 12 UTC (source: DWD).

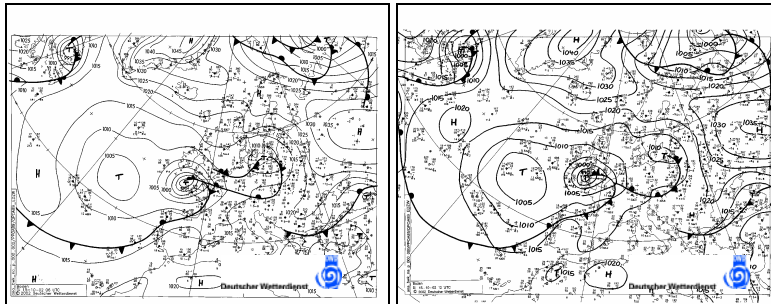


Fig. K2: Surface weather charts on 15 October 2002, 06 and 12 UTC (source: DWD).

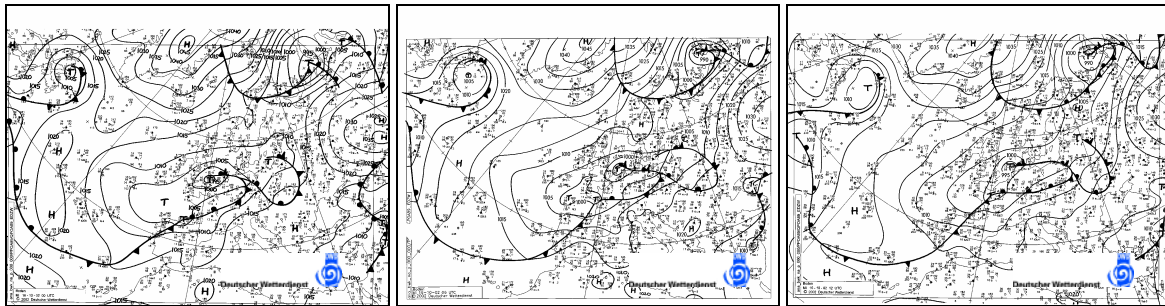


Fig. K3: Surface weather charts on 16 October 2002, 00, 06, and 12 UTC (source: DWD).

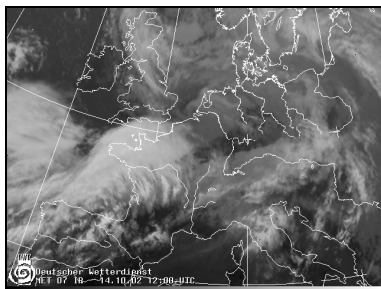


Fig. K4: IR-satellite picture on 14 October 2002, 12 UTC (source: DWD).

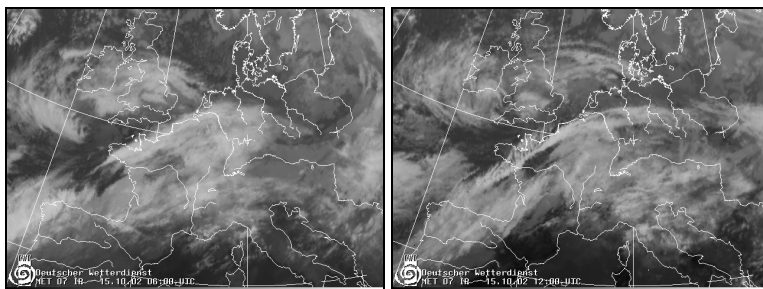


Fig. K5: IR-satellite pictures on 15 October 2002, 06 and 12 UTC (source: DWD).

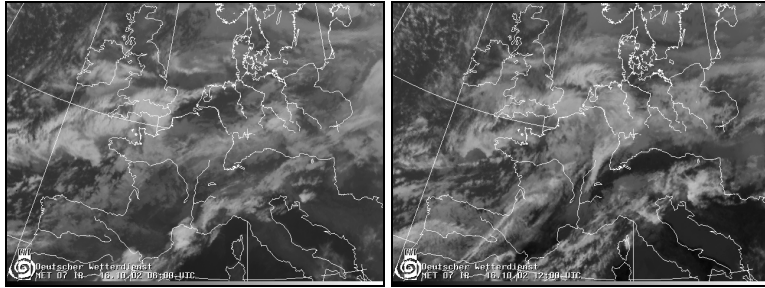


Fig. K6: IR-satellite pictures on 16 October 2002, 06 and 12 UTC (source: DWD).

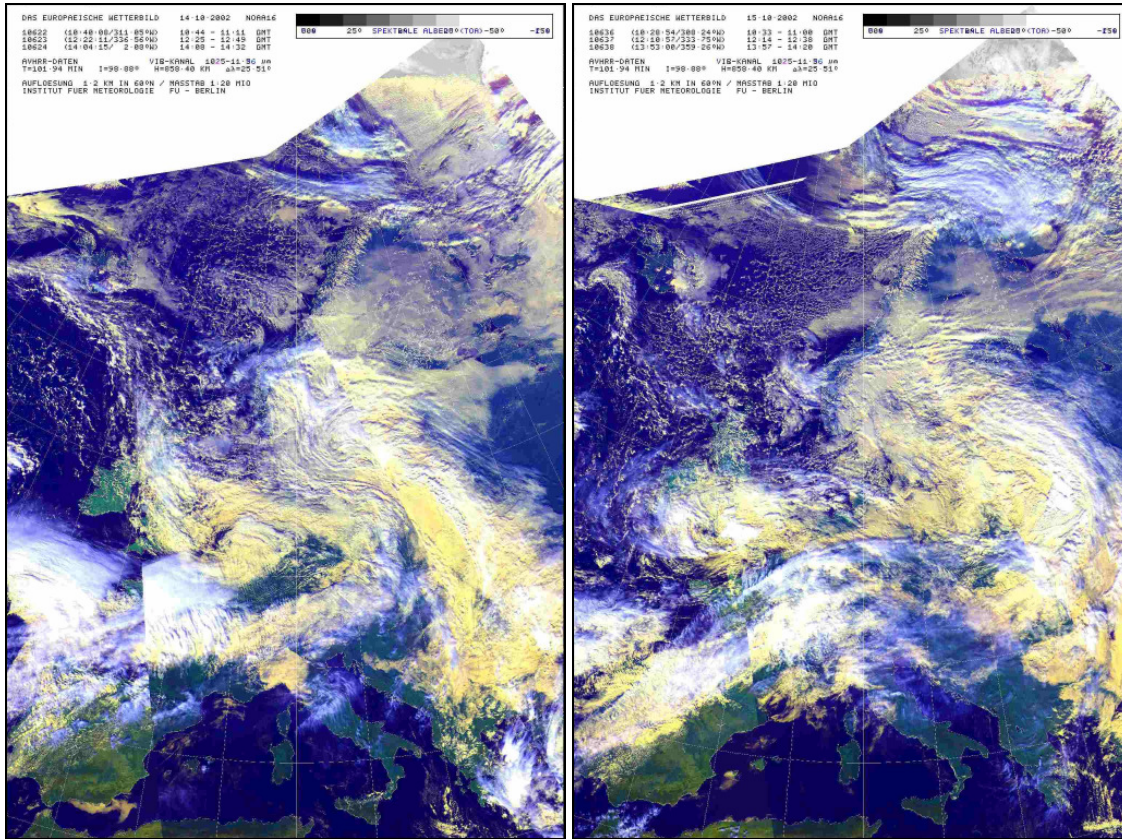


Fig. K7: NOAA satellite pictures on 14 and 15 October 2002 (source: Berliner Wetterkarte, 2001).

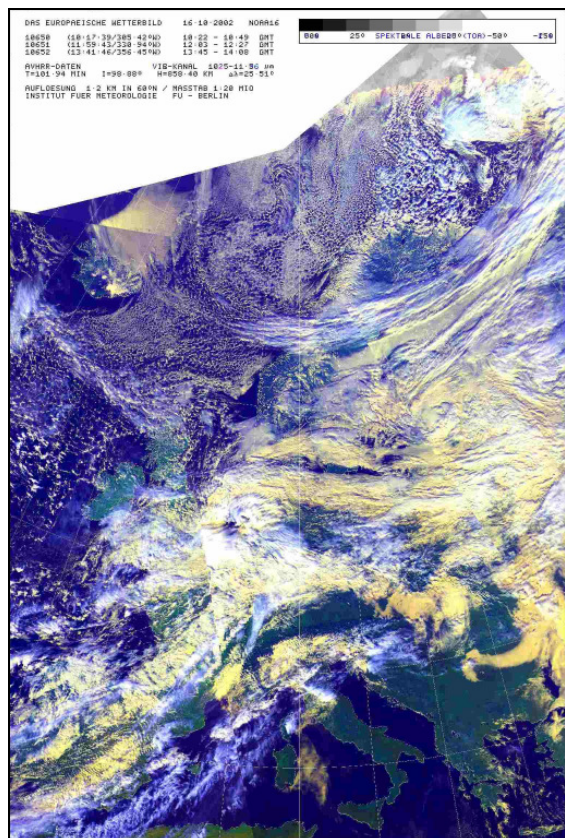


Fig. K8: NOAA satellite picture on 16 October 2002 (source: Berliner Wetterkarte, 2001).

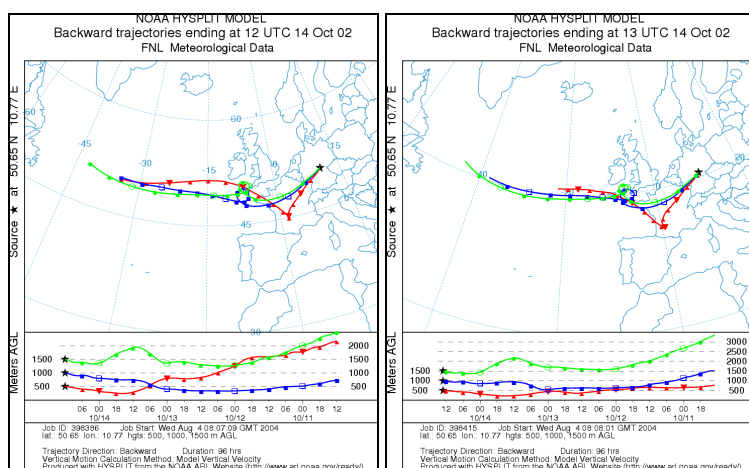


Fig. K9: Backward trajectories on 14 October 2002, 12 and 13 UTC (source: NOAA ARL Website).

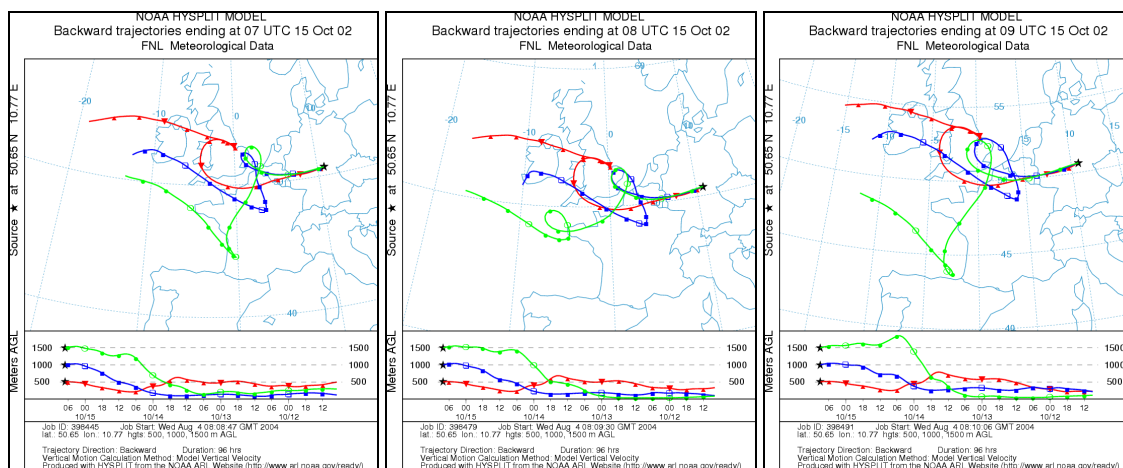


Fig. K10: Backward trajectories on 15 October 2002, 07, 08, and 09 UTC (source: NOAA ARL Website).

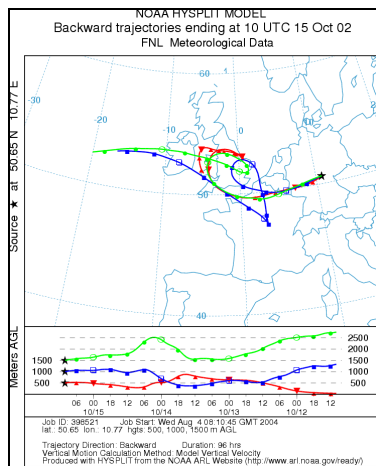


Fig. K11: Backward trajectories on 15 October 2002, 10 UTC (source: NOAA ARL Website).

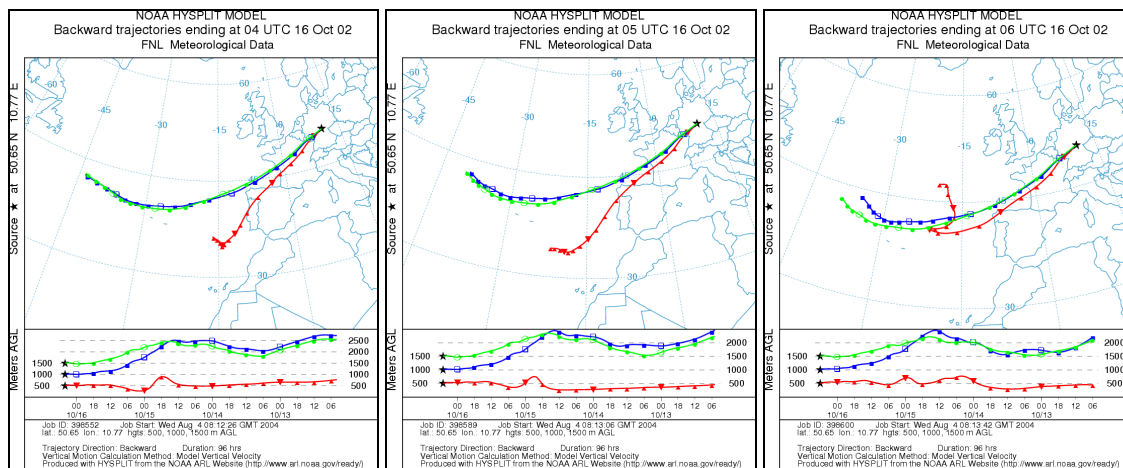


Fig. K12: Backward trajectories on 16 October 2002, 04, 05, and 06 UTC (source: NOAA ARL Website).

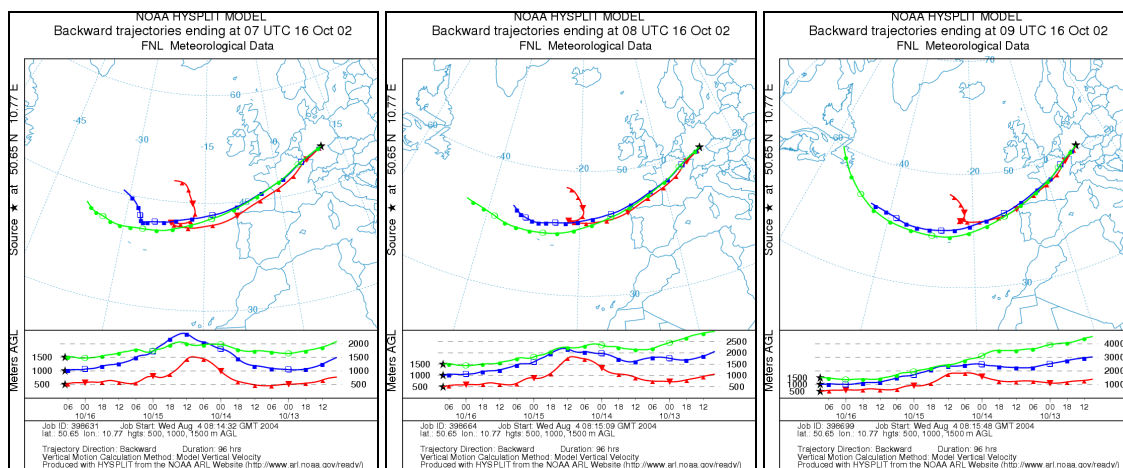


Fig. K13: Backward trajectories on 16 October 2002, 07, 08, and 09 UTC (source: NOAA ARL Website).

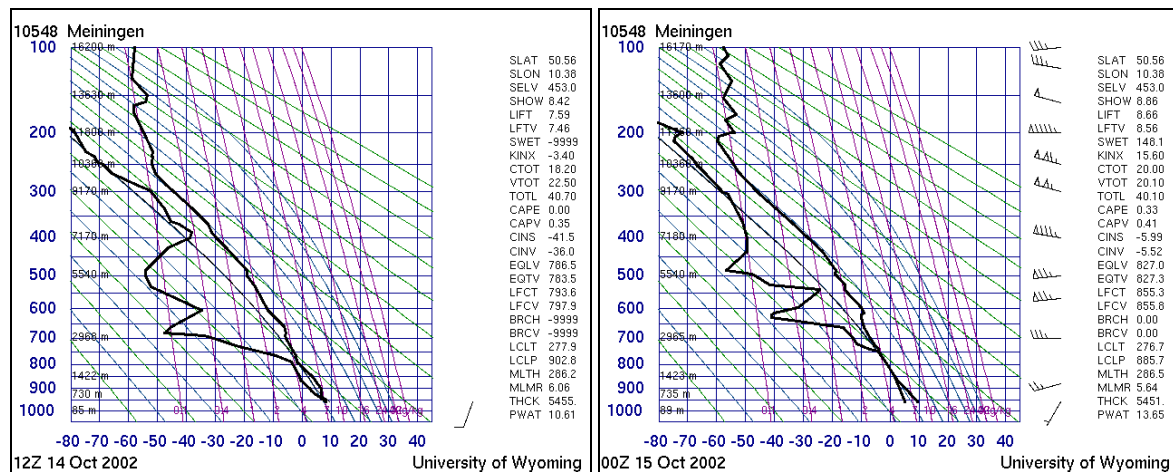


Fig. K14: Vertical rawinsonde profiles of temperature and dew-point temperature on 14 and 15 October 2002, 00 UTC (source: University of Wyoming).

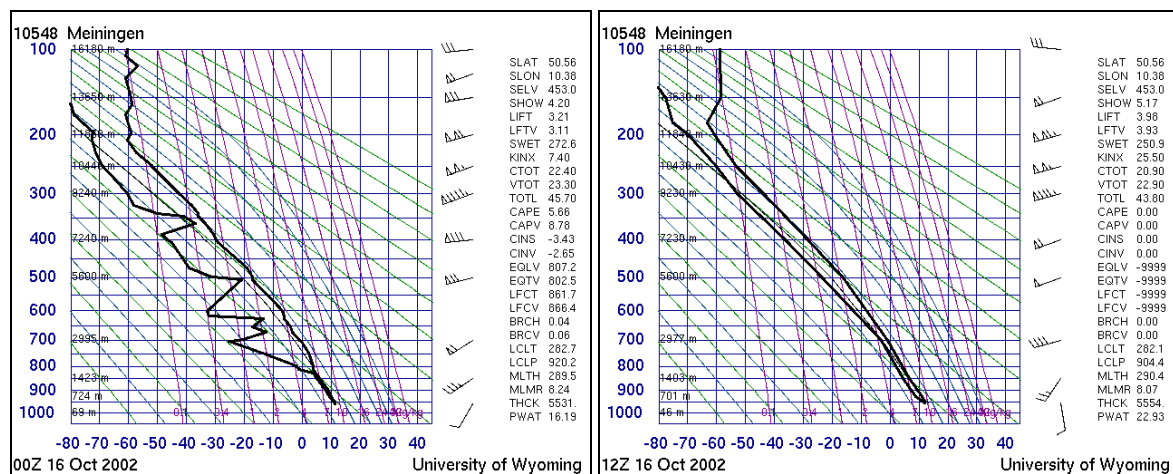


Fig. K15: Vertical rawinsonde profiles of temperature and dew-point temperature on 16 October 2002, 00 and 12 UTC (source: University of Wyoming).

Table K1: Locally measured meteorological data at the summit station Schmücke on 14 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	2.2	100.0	0.00	220.0	4.8	902.1
0:10	2.1	100.0	0.00	220.0	5.4	902.2
0:20	2.1	100.0	0.00	220.0	5.5	902.1
0:30	2.1	100.0	0.00	210.0	6.0	902.1
0:40	2.1	100.0	0.00	210.0	5.8	902.1
0:50	2.1	100.0	0.00	210.0	5.0	902.1
1:00	2.2	100.0	0.01	210.0	5.0	902.0
1:10	2.3	100.0	0.00	210.0	5.0	902.0
1:20	2.3	100.0	0.01	210.0	4.9	902.0
1:30	2.5	100.0	0.01	210.0	4.8	902.0
1:40	2.6	100.0	0.01	210.0	5.0	901.9
1:50	2.8	100.0	0.10	210.0	5.2	901.9
2:00	2.9	100.0	0.05	210.0	5.7	901.9
2:10	2.9	100.0	0.05	210.0	6.3	901.8
2:20	2.8	100.0	0.01	210.0	6.2	901.7
2:30	2.9	100.0	0.10	210.0	6.5	901.6
2:40	3.0	99.0	0.05	210.0	7.0	901.4
2:50	3.2	99.0	0.01	200.0	7.0	901.3
3:00	3.3	99.0	0.01	200.0	7.2	901.2
3:10	3.3	99.0	0.00	210.0	7.4	901.2
3:20	3.3	99.0	0.00	200.0	6.8	901.2
3:30	3.4	99.0	0.01	200.0	6.7	901.2
3:40	3.5	100.0	0.00	200.0	6.7	901.2
3:50	3.4	99.0	0.00	210.0	6.7	901.2
4:00	3.3	99.0	0.00	200.0	6.6	901.0
4:10	3.2	99.0	0.00	210.0	6.2	901.0
4:20	3.0	99.0	0.00	210.0	6.8	900.8
4:30	3.0	99.0	0.00	210.0	7.0	900.7
4:40	3.1	99.0	0.00	210.0	7.7	900.7
4:50	2.9	100.0	0.00	210.0	7.3	900.9
5:00	2.9	100.0	0.00	210.0	7.2	901.1
5:10	2.9	100.0	0.00	210.0	5.8	901.0
5:20	3.0	99.0	0.00	200.0	5.7	901.0
5:30	3.1	99.0	0.01	200.0	6.0	900.8
5:40	3.2	99.0	0.01	200.0	6.0	900.8
5:50	3.2	99.0	0.00	200.0	6.3	900.8
6:00	3.2	99.0	0.07	200.0	6.3	900.6
6:10	3.1	99.0	0.09	200.0	7.2	900.6
6:20	3.2	99.0	0.03	200.0	6.8	900.5
6:30	3.1	99.0	0.00	210.0	7.0	900.5
6:40	3.1	99.0	0.01	210.0	7.9	900.5
6:50	3.2	99.0	0.00	200.0	7.9	900.3
7:00	3.4	99.0	0.00	210.0	8.4	900.3
7:10	3.4	99.0	0.01	210.0	9.0	900.2
7:20	3.4	99.0	0.00	210.0	8.7	900.1
7:30	3.5	100.0	0.00	200.0	9.0	900.2
7:40	3.5	100.0	0.01	210.0	9.0	900.3
7:50	3.6	100.0	0.00	210.0	9.1	900.3

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
8:00	3.7	100.0	0.01	210.0	9.3	900.4
8:10	3.6	100.0	0.09	210.0	9.1	900.4
8:20	3.6	100.0	0.08	220.0	7.5	900.5
8:30	3.8	100.0	0.07	210.0	8.2	900.5
8:40	3.9	100.0	0.03	210.0	8.9	900.4
8:50	4.0	100.0	0.01	220.0	8.4	900.4
9:00	4.2	99.0	0.02	220.0	9.4	900.4
9:10	4.3	99.0	0.01	220.0	8.6	900.4
9:20	4.3	99.0	0.01	220.0	8.9	900.3
9:30	4.4	100.0	0.00	220.0	9.6	900.2
9:40	4.5	100.0	0.00	220.0	9.2	900.2
9:50	4.5	100.0	0.00	220.0	8.9	900.2
10:00	4.7	100.0	0.00	220.0	8.5	900.1
10:10	4.7	100.0	0.00	220.0	9.8	900.1
10:20	4.9	100.0	0.01	220.0	8.7	899.8
10:30	5.0	100.0	0.00	210.0	11.1	899.8
10:40	5.1	100.0	0.00	210.0	11.4	899.7
10:50	5.2	100.0	0.00	210.0	10.8	899.7
11:00	5.3	100.0	0.00	220.0	9.9	899.8
11:10	5.4	100.0	0.00	220.0	10.1	899.8
11:20	5.5	100.0	0.00	220.0	10.4	899.7
11:30	5.6	100.0	0.00	220.0	10.0	899.7
11:40	5.7	100.0	0.00	220.0	9.7	899.6
11:50	5.9	100.0	0.00	220.0	10.4	899.6
12:00	6.0	100.0	0.00	220.0	10.6	899.5
12:10	6.1	100.0	0.00	220.0	10.4	899.5
12:20	6.2	100.0	0.00	220.0	9.9	899.5
12:30	6.4	100.0	0.00	220.0	9.5	899.4
12:40	6.4	100.0	0.00	220.0	8.8	899.5
12:50	6.6	100.0	0.00	220.0	9.0	899.3
13:00	6.6	100.0	0.00	210.0	10.9	899.3
13:10	6.8	100.0	0.00	210.0	10.9	899.4
13:20	6.7	100.0	0.00	220.0	10.3	899.4
13:30	7.2	100.0	0.00	210.0	10.6	899.4
13:40	7.3	100.0	0.00	210.0	10.9	899.5
13:50	7.1	100.0	0.00	220.0	10.8	899.5
14:00	6.7	100.0	0.00	220.0	10.9	899.6
14:10	6.6	100.0	0.00	210.0	10.8	900.0
14:20	6.6	100.0	0.00	210.0	10.3	899.9
14:30	6.7	100.0	0.00	210.0	10.3	899.6
14:40	6.9	100.0	0.00	210.0	11.9	899.5
14:50	6.8	100.0	0.00	210.0	10.1	899.5
15:00	6.8	100.0	0.00	220.0	10.0	899.4
15:10	7.0	100.0	0.00	210.0	10.3	899.4
15:20	7.0	100.0	0.00	210.0	10.8	899.5
15:30	7.0	100.0	0.00	220.0	9.7	899.5
15:40	7.0	100.0	0.00	220.0	10.2	899.5
15:50	6.8	98.0	0.00	220.0	9.6	899.7
16:00	6.9	94.0	0.00	220.0	11.7	899.6
16:10	7.0	91.0	0.00	220.0	10.7	899.8
16:20	6.8	91.0	0.00	220.0	10.0	899.7
16:30	6.8	91.0	0.00	220.0	10.3	899.6
16:40	6.6	91.0	0.00	220.0	10.8	899.6
16:50	6.3	92.0	0.00	220.0	11.3	899.5
17:00	6.2	92.0	0.00	220.0	10.6	899.6
17:10	6.1	91.0	0.00	220.0	10.8	899.6
17:20	6.0	91.0	0.00	220.0	10.3	899.7
17:30	5.9	92.0	0.00	220.0	10.0	899.8
17:40	5.8	92.0	0.00	220.0	11.1	899.8
17:50	5.9	92.0	0.00	220.0	10.2	899.9
18:00	5.9	92.0	0.00	220.0	10.7	900.0
18:10	5.9	92.0	0.00	220.0	10.6	899.9
18:20	6.0	92.0	0.00	220.0	10.1	899.8
18:30	6.1	91.0	0.00	220.0	10.5	899.9
18:40	6.0	92.0	0.00	220.0	10.0	900.0
18:50	6.0	92.0	0.00	220.0	9.6	899.9
19:00	6.1	90.0	0.00	220.0	10.2	899.9
19:10	6.2	89.0	0.00	220.0	10.9	899.9
19:20	6.0	91.0	0.00	220.0	10.5	899.7
19:30	5.8	92.0	0.00	220.0	10.2	899.7
19:40	5.7	93.0	0.00	220.0	10.9	899.7
19:50	5.6	93.0	0.00	220.0	10.6	899.8
20:00	5.6	93.0	0.00	220.0	9.3	900.0
20:10	5.5	93.0	0.00	220.0	10.0	899.9
20:20	5.5	92.0	0.00	220.0	10.4	900.0
20:30	5.5	91.0	0.00	220.0	10.5	900.1
20:40	5.5	90.0	0.00	220.0	11.4	900.0
20:50	5.5	90.0	0.00	220.0	11.2	900.2
21:00	5.4	90.0	0.00	220.0	10.3	900.1
21:10	5.3	90.0	0.00	220.0	10.0	900.2
21:20	5.2	89.0	0.00	220.0	10.1	900.3
21:30	5.2	89.0	0.00	220.0	9.6	900.3
21:40	5.2	89.0	0.00	230.0	9.9	900.3
21:50	5.1	91.0	0.00	230.0	8.0	900.3
22:00	5.1	91.0	0.00	230.0	8.8	900.2
22:10	5.0	93.0	0.00	230.0	8.9	900.3
22:20	5.0	93.0	0.00	230.0	8.7	900.3
22:30	4.9	94.0	0.00	230.0	7.8	900.3
22:40	4.9	94.0	0.00	230.0	7.5	900.3
22:50	4.8	95.0	0.00	230.0	7.7	900.4
23:00	4.8	95.0	0.00	230.0	7.7	900.6
23:10	4.8	96.0	0.00	230.0	6.8	900.8
23:20	4.8	96.0	0.00	220.0	7.0	901.0
23:30	4.7	97.0	0.00	220.0	8.8	901.0
23:40	4.7	97.0	0.00	220.0	8.4	901.2
23:50	4.7	97.0	0.00	220.0	7.5	901.2

Table K2: Locally measured meteorological data at the summit station Schmücke on 15 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	4.7	98.0	0.00	230.0	6.7	901.2
0:10	4.7	99.0	0.00	220.0	7.0	901.2
0:20	4.7	99.0	0.00	220.0	7.0	901.3
0:30	4.7	99.0	0.00	220.0	8.1	901.5
0:40	4.7	99.0	0.00	220.0	8.3	901.6
0:50	4.7	99.0	0.00	220.0	8.9	901.6
1:00	4.7	99.0	0.00	220.0	8.7	901.6
1:10	4.7	99.0	0.00	220.0	8.6	901.6
1:20	4.6	99.0	0.00	220.0	8.1	901.6
1:30	4.6	99.0	0.00	220.0	9.0	901.6
1:40	4.6	99.0	0.00	220.0	8.0	901.8
1:50	4.6	99.0	0.00	220.0	6.8	902.0
2:00	4.6	99.0	0.00	220.0	6.2	902.1
2:10	4.6	99.0	0.00	220.0	6.3	902.0
2:20	4.6	99.0	0.00	230.0	7.0	902.0

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
2:30	4.6	99.0	0.00	230.0	7.3	902.1
2:40	4.6	99.0	0.00	230.0	7.4	902.2
2:50	4.5	100.0	0.00	230.0	7.0	902.4
3:00	4.5	100.0	0.00	240.0	6.4	902.6
3:10	4.5	100.0	0.00	230.0	6.2	902.7
3:20	4.5	100.0	0.00	230.0	6.4	902.6
3:30	4.5	100.0	0.00	240.0	6.5	902.6
3:40	4.5	100.0	0.00	240.0	6.7	902.5
3:50	4.5	100.0	0.00	240.0	6.0	902.5
4:00	4.5	100.0	0.00	230.0	5.6	902.5
4:10	4.4	100.0	0.00	220.0	5.0	902.7
4:20	4.4	100.0	0.00	220.0	5.7	902.7
4:30	4.4	100.0	0.00	230.0	5.1	902.6
4:40	4.4	100.0	0.00	230.0	5.4	902.5
4:50	4.4	100.0	0.00	230.0	5.4	902.5
5:00	4.4	100.0	0.00	220.0	5.4	902.6
5:10	4.4	100.0	0.00	220.0	5.0	902.6
5:20	4.4	100.0	0.00	230.0	4.9	902.4
5:30	4.4	100.0	0.00	230.0	5.2	902.5
5:40	4.3	99.0	0.00	220.0	5.7	902.5
5:50	4.3	99.0	0.00	220.0	5.6	902.7
6:00	4.3	99.0	0.00	220.0	5.1	902.9
6:10	4.2	99.0	0.00	230.0	5.1	903.1
6:20	4.2	99.0	0.00	230.0	5.2	903.3
6:30	4.1	99.0	0.00	230.0	5.2	903.4
6:40	4.1	99.0	0.00	220.0	4.9	903.4
6:50	4.1	99.0	0.00	220.0	5.9	903.3
7:00	4.1	99.0	0.00	220.0	5.7	903.3
7:10	4.1	99.0	0.00	220.0	4.9	903.3
7:20	4.1	99.0	0.00	220.0	4.7	903.2
7:30	4.1	99.0	0.00	220.0	5.8	903.1
7:40	4.1	99.0	0.00	220.0	6.2	903.4
7:50	4.1	99.0	0.00	220.0	6.6	903.4
8:00	4.1	99.0	0.00	220.0	6.1	903.4
8:10	4.2	99.0	0.00	220.0	5.9	903.4
8:20	4.3	99.0	0.00	220.0	5.7	903.4
8:30	4.4	100.0	0.00	220.0	4.9	903.4
8:40	4.3	99.0	0.00	220.0	5.3	903.5
8:50	4.4	100.0	0.00	220.0	4.9	903.3
9:00	4.4	100.0	0.00	210.0	5.6	903.2
9:10	4.4	100.0	0.00	210.0	6.7	903.3
9:20	4.4	100.0	0.00	220.0	5.9	903.3
9:30	4.6	100.0	0.00	210.0	6.7	903.3
9:40	4.6	100.0	0.00	210.0	6.3	903.2
9:50	4.7	100.0	0.00	210.0	7.0	903.1
10:00	4.8	100.0	0.00	210.0	7.1	902.9
10:10	5.0	100.0	0.00	210.0	7.4	902.8
10:20	5.2	100.0	0.00	210.0	7.9	902.9
10:30	5.3	100.0	0.00	210.0	7.6	903.1
10:40	5.3	100.0	0.00	210.0	7.8	903.2
10:50	5.5	100.0	0.00	210.0	6.0	903.2
11:00	5.4	100.0	0.00	200.0	5.5	903.0
11:10	5.5	100.0	0.00	210.0	6.3	903.1
11:20	5.6	100.0	0.00	210.0	6.8	903.0
11:30	5.8	100.0	0.00	220.0	7.2	903.0
11:40	6.1	100.0	0.00	210.0	7.1	902.8
11:50	6.0	100.0	0.00	210.0	8.1	903.0
12:00	6.1	100.0	0.00	210.0	7.3	902.7
12:10	6.6	97.0	0.00	210.0	7.7	902.7
12:20	6.9	94.0	0.00	210.0	7.5	902.6
12:30	7.2	91.0	0.00	220.0	7.2	902.6
12:40	7.1	91.0	0.00	210.0	7.5	902.7
12:50	6.7	91.0	0.00	210.0	7.8	902.4
13:00	7.1	92.0	0.00	210.0	7.2	902.0
13:10	7.4	90.0	0.00	210.0	8.0	902.2
13:20	7.0	91.0	0.00	210.0	8.7	902.1
13:30	6.8	94.0	0.00	210.0	6.9	902.2
13:40	6.7	94.0	0.00	210.0	7.5	902.1
13:50	6.5	95.0	0.00	210.0	7.3	902.1
14:00	6.5	97.0	0.00	210.0	8.3	902.0
14:10	6.5	97.0	0.00	210.0	6.7	902.0
14:20	6.5	97.0	0.00	210.0	7.3	902.1
14:30	6.5	98.0	0.00	210.0	6.5	902.1
14:40	6.4	100.0	0.00	210.0	5.4	902.2
14:50	6.4	100.0	0.00	200.0	5.2	902.1
15:00	6.4	100.0	0.00	220.0	4.9	902.4
15:10	6.3	100.0	0.94	230.0	4.8	902.7
15:20	6.2	100.0	0.30	220.0	5.0	902.3
15:30	6.2	100.0	0.06	210.0	5.0	901.9
15:40	6.2	100.0	0.01	200.0	5.0	901.5
15:50	6.2	100.0	0.01	200.0	4.0	901.7
16:00	6.3	100.0	0.03	200.0	4.4	901.5
16:10	6.4	100.0	0.32	190.0	4.9	901.3
16:20	6.5	100.0	0.05	210.0	3.5	901.4
16:30	6.8	100.0	0.04	190.0	4.2	901.4
16:40	6.9	100.0	0.03	180.0	6.0	901.4
16:50	6.9	100.0	0.02	190.0	5.4	901.5
17:00	7.0	100.0	1.67	210.0	5.3	902.1
17:10	6.9	100.0	2.85	200.0	6.6	902.2
17:20	6.9	100.0	1.86	210.0	5.5	902.3
17:30	6.9	100.0	1.29	220.0	5.4	902.1
17:40	6.8	100.0	0.33	200.0	5.2	901.7
17:50	6.9	100.0	0.22	210.0	6.2	901.6
18:00	7.1	100.0	0.38	220.0	7.3	901.5
18:10	7.3	100.0	0.12	210.0	7.4	901.2
18:20	7.7	100.0	0.21	210.0	9.9	901.1
18:30	8.2	100.0	0.05	210.0	11.8	900.8
18:40	7.9	100.0	0.03	210.0	11.3	900.7
18:50	8.0	100.0	0.01	210.0	11.0	900.6
19:00	8.1	100.0	0.01	210.0	11.3	900.6
19:10	8.3	100.0	0.00	210.0	12.0	900.6
19:20	8.3	100.0	0.03	210.0	11.4	900.8
19:30	8.4	100.0	0.11	210.0	10.6	900.7
19:40	8.7	100.0	0.23	220.0	9.1	900.8
19:50	8.8	100.0	0.41	220.0	9.3	900.9
20:00	8.9	100.0	0.54	210.0	10.5	900.9
20:10	8.8	100.0	0.58	210.0	9.4	901.0
20:20	8.9	100.0	0.39	210.0	11.3	900.8
20:30	9.0	100.0	0.31	210.0	11.4	900.7
20:40	9.0	100.0	0.18	210.0	11.5	900.5
20:50	9.1	100.0	0.08	210.0	10.9	900.5
21:00	9.1	100.0	0.03	210.0	12.0	900.3
21:10	9.2	100.0	0.08	210.0	12.5	900.1
21:20	9.1	100.0	0.08	210.0	10.9	900.0
21:30	9.2	100.0	0.03	210.0	12.0	899.9
21:40	9.2	100.0	0.01	210.0	12.7	899.9
21:50	9.2	100.0	0.01	210.0	12.7	900.0
22:00	9.2	100.0	0.01	220.0	11.5	899.9

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
22:10	9.2	100.0	0.00	220.0	10.8	899.8
22:20	9.3	100.0	0.00	210.0	12.2	899.7
22:30	9.3	100.0	0.00	210.0	12.4	899.5
22:40	9.3	100.0	0.01	210.0	11.8	899.4
22:50	9.2	100.0	0.00	210.0	12.7	899.4
23:00	9.2	100.0	0.00	220.0	11.9	899.4
23:10	9.1	100.0	0.00	220.0	12.4	899.4
23:20	9.1	100.0	0.00	220.0	10.7	899.3
23:30	9.1	100.0	0.00	220.0	11.8	899.3
23:40	9.0	100.0	0.01	220.0	11.3	899.2
23:50	9.1	100.0	0.00	220.0	11.7	899.2

Table K3: Locally measured meteorological data at the summit station Schmücke on 16 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	9.1	100.0	0.00	220.0	12.3	899.1
0:10	9.1	100.0	0.00	220.0	11.4	899.1
0:20	9.2	100.0	0.00	220.0	11.3	899.1
0:30	9.2	100.0	0.00	220.0	11.3	899.1
0:40	9.2	100.0	0.00	220.0	10.3	899.1
0:50	9.1	100.0	0.00	220.0	10.4	899.1
1:00	9.1	100.0	0.00	220.0	10.0	899.1
1:10	9.1	100.0	0.00	220.0	10.5	899.0
1:20	8.9	100.0	0.00	220.0	10.0	898.9
1:30	8.8	100.0	0.00	220.0	9.8	898.8
1:40	8.8	100.0	0.00	220.0	9.7	898.8
1:50	8.7	100.0	0.00	220.0	9.0	898.8
2:00	8.7	100.0	0.00	220.0	8.7	898.7
2:10	8.7	100.0	0.00	220.0	9.3	898.7
2:20	8.6	100.0	0.00	220.0	9.4	898.7
2:30	8.6	100.0	0.00	220.0	9.6	898.8
2:40	8.6	100.0	0.00	220.0	9.3	898.8
2:50	8.5	100.0	0.00	220.0	8.7	898.6
3:00	8.5	100.0	0.00	220.0	9.5	898.6
3:10	8.6	100.0	0.00	220.0	9.2	898.7
3:20	8.6	100.0	0.00	220.0	9.1	898.6
3:30	8.6	100.0	0.00	210.0	10.4	898.6
3:40	8.6	100.0	0.00	220.0	10.6	898.5
3:50	8.5	100.0	0.00	220.0	8.9	898.5
4:00	8.5	100.0	0.00	220.0	8.6	898.6
4:10	8.5	100.0	0.00	220.0	8.5	898.5
4:20	8.4	100.0	0.00	220.0	8.7	898.5
4:30	8.4	100.0	0.00	220.0	8.8	898.4
4:40	8.3	100.0	0.00	220.0	8.6	898.2
4:50	8.2	100.0	0.00	220.0	9.8	898.2
5:00	8.2	100.0	0.00	220.0	9.6	898.2
5:10	8.2	100.0	0.00	220.0	9.5	898.0
5:20	8.2	100.0	0.00	220.0	9.0	898.0
5:30	8.2	100.0	0.00	220.0	9.5	898.1
5:40	8.1	100.0	0.00	220.0	10.2	898.2
5:50	8.1	100.0	0.00	220.0	9.2	898.2
6:00	8.1	100.0	0.00	220.0	10.1	898.0
6:10	8.1	100.0	0.00	210.0	9.7	898.1
6:20	8.0	100.0	0.00	210.0	10.2	898.0
6:30	8.0	100.0	0.00	220.0	8.9	898.1
6:40	8.0	100.0	0.00	220.0	8.7	898.2
6:50	8.0	100.0	0.00	220.0	8.6	898.4
7:00	8.0	100.0	0.00	220.0	8.8	898.1
7:10	8.1	100.0	0.00	220.0	8.8	898.3
7:20	8.1	100.0	0.00	220.0	9.0	898.2
7:30	8.2	100.0	0.00	220.0	8.5	898.2
7:40	8.3	100.0	0.00	220.0	8.2	898.2
7:50	8.3	100.0	0.00	220.0	9.1	898.3
8:00	8.3	100.0	0.00	220.0	8.8	898.3
8:10	8.3	100.0	0.00	210.0	10.7	898.2
8:20	8.3	100.0	0.00	210.0	11.1	898.2
8:30	8.3	100.0	0.00	210.0	10.2	898.4
8:40	8.3	100.0	0.00	210.0	9.6	898.4
8:50	8.3	100.0	0.10	210.0	10.2	898.3
9:00	8.4	100.0	0.08	210.0	10.2	898.3
9:10	8.5	100.0	0.12	220.0	9.4	898.5
9:20	8.5	100.0	0.26	210.0	10.0	898.4
9:30	8.6	100.0	0.44	210.0	9.7	898.1
9:40	8.6	100.0	0.15	210.0	9.2	897.9
9:50	8.7	100.0	0.14	210.0	9.1	897.8
10:00	8.7	100.0	0.15	210.0	8.8	898.0
10:10	8.8	100.0	0.36	210.0	8.6	897.7
10:20	8.8	100.0	0.40	210.0	7.5	897.5
10:30	8.9	100.0	0.22	210.0	8.8	897.5
10:40	9.0	100.0	0.04	210.0	8.3	897.4
10:50	9.0	100.0	0.07	210.0	8.8	897.2
11:00	9.0	100.0	0.04	210.0	9.4	897.2
11:10	8.9	100.0	0.02	210.0	8.6	897.0
11:20	8.9	100.0	0.03	210.0	8.8	896.9
11:30	9.0	100.0	0.02	210.0	7.8	896.6
11:40	9.0	100.0	0.05	200.0	7.8	896.5
11:50	8.9	100.0	0.34	200.0	8.7	896.5
12:00	8.7	100.0	0.83	200.0	8.8	896.6
12:10	8.7	100.0	0.63	210.0	8.4	896.6
12:20	8.6	100.0	0.88	210.0	8.9	896.5
12:30	8.6	100.0	0.47	210.0	8.6	896.2
12:40	8.6	100.0	0.34	210.0	8.1	896.2
12:50	8.6	100.0	0.47	210.0	7.8	895.9
13:00	8.7	100.0	0.18	210.0	8.3	895.8
13:10	8.7	100.0	0.04	210.0	9.2	895.7
13:20	8.8	100.0	0.13	210.0	8.3	895.5
13:30	8.9	100.0	0.10	210.0	9.0	895.5
13:40	8.9	100.0	0.44	200.0	8.4	895.3
13:50	8.9	100.0	0.12	200.0	8.6	895.1
14:00	9.0	100.0	0.05	200.0	8.7	895.0
14:10	9.1	100.0	0.17	200.0	8.4	895.0
14:20	9.1	100.0	0.51	210.0	9.2	895.0
14:30	9.2	100.0	0.51	210.0	8.7	894.8
14:40	9.2	100.0	0.07	200.0	8.0	894.6
14:50	9.3	100.0	0.17	210.0	8.7	894.5
15:00	9.3	100.0	0.54	210.0	8.6	894.6
15:10	9.4	100.0	0.13	210.0	8.7	894.6
15:20	9.5	100.0	0.09	220.0	8.3	894.6
15:30	9.5	100.0	0.05	220.0	7.4	894.4
15:40	9.6	100.0	0.04	210.0	6.5	894.2
15:50	9.8	100.0	0.03	210.0	9.3	894.1
16:00	9.8	100.0	0.13	210.0	8.7	894.2
16:10	9.9	100.0	0.08	210.0	8.5	894.1
16:20	9.9	100.0	0.03	210.0	8.8	893.9
16:30	10.1	100.0	0.01	210.0	9.8	893.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
16:40	10.1	100.0	0.01	210.0	10.3	893.8
16:50	10.2	100.0	0.00	210.0	10.2	893.7
17:00	10.3	100.0	0.01	210.0	10.8	893.7
17:10	10.5	100.0	0.26	210.0	12.0	893.6
17:20	10.5	100.0	0.91	210.0	12.0	893.7
17:30	10.0	100.0	0.79	210.0	14.5	893.3
17:40	10.0	100.0	0.29	220.0	10.7	893.4
17:50	10.1	100.0	0.19	220.0	8.7	893.3
18:00	10.2	100.0	0.10	220.0	8.9	893.3
18:10	10.2	100.0	0.24	220.0	10.5	893.2
18:20	10.2	100.0	0.51	220.0	10.1	893.3
18:30	10.2	100.0	0.93	220.0	8.0	893.3
18:40	10.2	100.0	0.22	230.0	6.9	893.2
18:50	10.3	100.0	0.11	220.0	8.9	893.3
19:00	10.2	100.0	0.05	230.0	7.3	893.3
19:10	10.1	100.0	0.03	220.0	7.8	893.3
19:20	10.1	100.0	0.00	220.0	7.1	893.3
19:30	10.1	100.0	0.01	220.0	8.2	893.6
19:40	9.9	100.0	0.00	220.0	8.6	893.7
19:50	9.7	100.0	0.00	220.0	9.3	893.5
20:00	9.6	100.0	0.00	220.0	8.4	893.5
20:10	9.5	100.0	0.00	210.0	8.2	893.5
20:20	9.5	100.0	0.00	220.0	8.9	893.6
20:30	9.5	100.0	0.00	210.0	9.6	893.5
20:40	9.5	100.0	0.00	220.0	10.0	893.2
20:50	9.4	100.0	0.00	220.0	9.9	893.3
21:00	9.3	100.0	0.00	210.0	10.2	893.3
21:10	9.2	100.0	0.00	210.0	9.7	893.3
21:20	9.1	100.0	0.00	210.0	10.9	893.1
21:30	9.0	100.0	0.00	210.0	10.7	892.9
21:40	8.9	100.0	0.00	210.0	11.6	893.0
21:50	8.9	100.0	0.00	210.0	11.1	892.8
22:00	8.9	100.0	0.00	210.0	11.2	892.8
22:10	8.8	100.0	0.00	210.0	10.1	892.7
22:20	8.8	100.0	0.00	210.0	10.0	892.8
22:30	8.6	100.0	0.00	210.0	10.9	892.8
22:40	8.4	100.0	0.00	210.0	11.3	892.7
22:50	8.4	100.0	0.00	210.0	10.4	892.8
23:00	8.3	100.0	0.00	210.0	10.0	892.8
23:10	8.2	100.0	0.00	210.0	11.4	893.1
23:20	8.1	100.0	0.00	210.0	10.3	892.8
23:30	8.1	100.0	0.00	220.0	10.8	892.8
23:40	8.0	100.0	0.00	210.0	10.2	892.6
23:50	7.9	100.0	0.00	220.0	11.0	892.6

L: The cloud event 16/17-10-2001

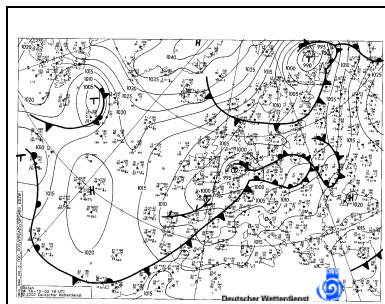


Fig. L1: Surface weather chart on 16 October 2002, 18 UTC (source: DWD).

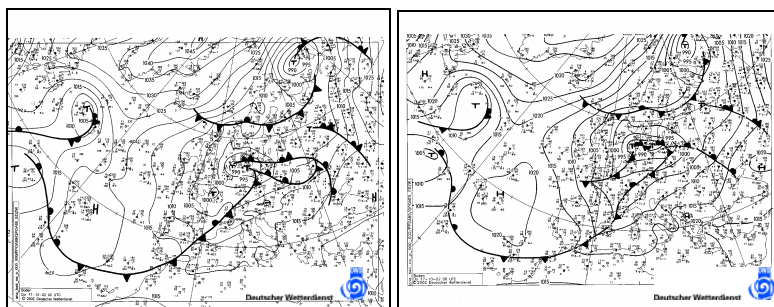


Fig. L2: Surface weather charts on 17 October 2002, 00 and 06 UTC (source: DWD).

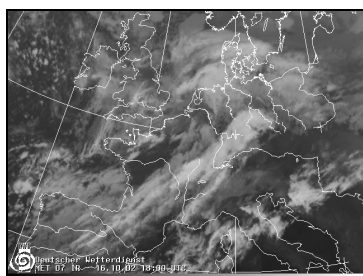


Fig. L3: IR-satellite picture on 16 October 2002, 18 UTC (source: DWD).

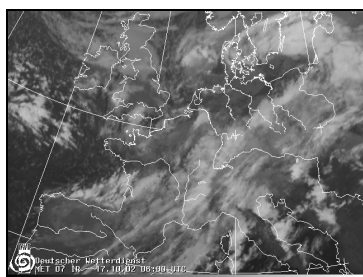


Fig. L4: IR-satellite picture on 17 October 2002, 06 UTC (source: DWD).

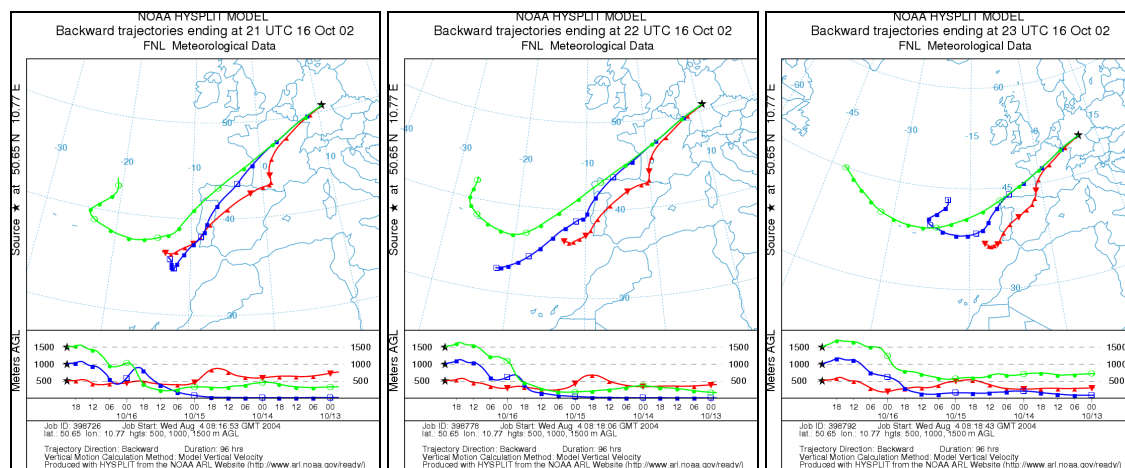


Fig. L5: Backward trajectories on 16 October 2002, 21, 22, and 23 UTC (source: NOAA ARL Website).

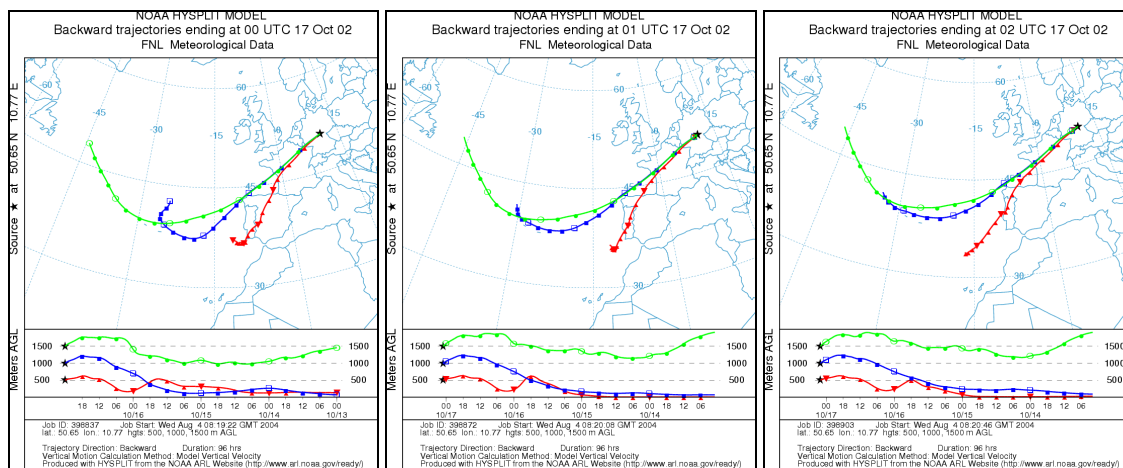


Fig. L6: Backward trajectories on 17 October 2002, 00, 01, and 02 UTC (source: NOAA ARL Website).

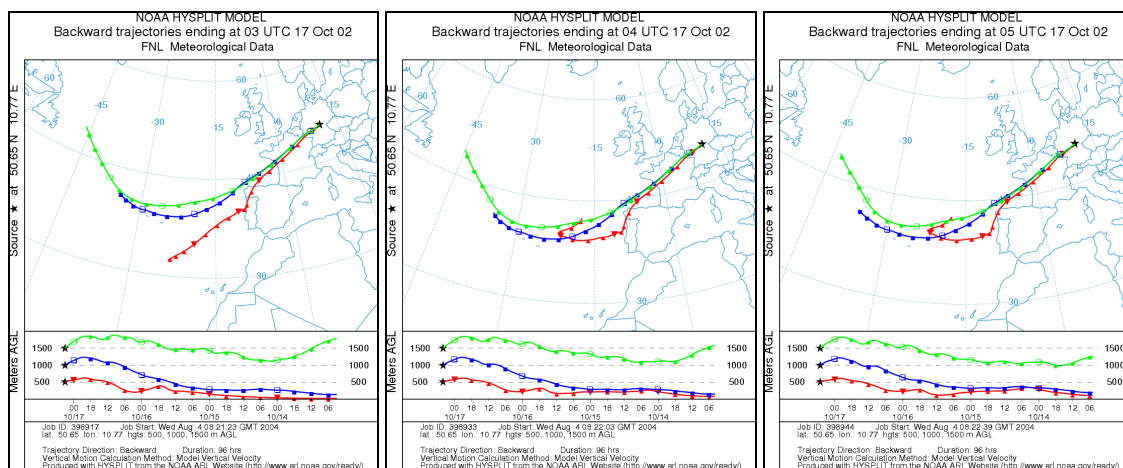


Fig. L7: Backward trajectories on 17 October 2002, 03, 04, and 05 UTC (source: NOAA ARL Website).

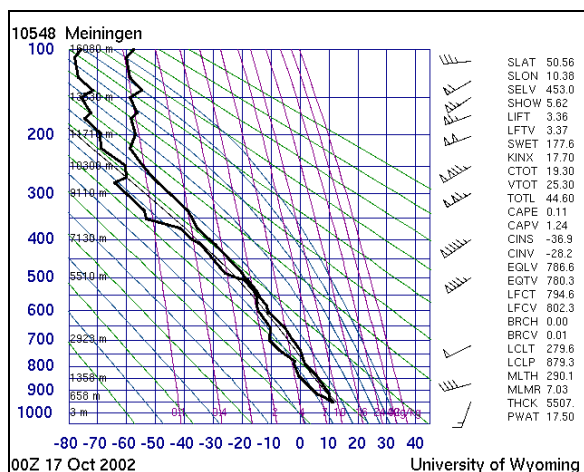


Fig. L8: Vertical rawinsonde profile of temperature and dew-point temperature on 17 October 2002, 00 UTC (source: University of Wyoming).

Table L1: Locally measured meteorological data at the summit station Schmücke on 16 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	9.1	100.0	0.00	220.0	12.3	899.1
0:10	9.1	100.0	0.00	220.0	11.4	899.1
0:20	9.2	100.0	0.00	220.0	11.3	899.1
0:30	9.2	100.0	0.00	220.0	11.3	899.1
0:40	9.2	100.0	0.00	220.0	10.3	899.1
0:50	9.1	100.0	0.00	220.0	10.4	899.1
1:00	9.1	100.0	0.00	220.0	10.0	899.1
1:10	9.1	100.0	0.00	220.0	10.5	899.0
1:20	8.9	100.0	0.00	220.0	10.0	898.9
1:30	8.8	100.0	0.00	220.0	9.8	898.8
1:40	8.8	100.0	0.00	220.0	9.7	898.8
1:50	8.7	100.0	0.00	220.0	9.0	898.8
2:00	8.7	100.0	0.00	220.0	8.7	898.7
2:10	8.7	100.0	0.00	220.0	9.3	898.7
2:20	8.6	100.0	0.00	220.0	9.4	898.7
2:30	8.6	100.0	0.00	220.0	9.6	898.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
2:40	8.6	100.0	0.00	220.0	9.3	898.8
2:50	8.5	100.0	0.00	220.0	8.7	898.6
3:00	8.5	100.0	0.00	220.0	9.5	898.6
3:10	8.6	100.0	0.00	220.0	9.2	898.7
3:20	8.6	100.0	0.00	220.0	9.1	898.6
3:30	8.6	100.0	0.00	210.0	10.4	898.6
3:40	8.6	100.0	0.00	220.0	10.6	898.5
3:50	8.5	100.0	0.00	220.0	8.9	898.5
4:00	8.5	100.0	0.00	220.0	8.6	898.6
4:10	8.5	100.0	0.00	220.0	8.5	898.5
4:20	8.4	100.0	0.00	220.0	8.7	898.5
4:30	8.4	100.0	0.00	220.0	8.8	898.4
4:40	8.3	100.0	0.00	220.0	8.6	898.2
4:50	8.2	100.0	0.00	220.0	9.8	898.2
5:00	8.2	100.0	0.00	220.0	9.6	898.2
5:10	8.2	100.0	0.00	220.0	9.5	898.0
5:20	8.2	100.0	0.00	220.0	9.0	898.0
5:30	8.2	100.0	0.00	220.0	9.5	898.1
5:40	8.1	100.0	0.00	220.0	10.2	898.2
5:50	8.1	100.0	0.00	220.0	9.2	898.2
6:00	8.1	100.0	0.00	220.0	10.1	898.0
6:10	8.1	100.0	0.00	210.0	9.7	898.1
6:20	8.0	100.0	0.00	210.0	10.2	898.0
6:30	8.0	100.0	0.00	220.0	8.9	898.1
6:40	8.0	100.0	0.00	220.0	8.7	898.2
6:50	8.0	100.0	0.00	220.0	8.6	898.4
7:00	8.0	100.0	0.00	220.0	8.8	898.1
7:10	8.1	100.0	0.00	220.0	8.8	898.3
7:20	8.1	100.0	0.00	220.0	9.0	898.2
7:30	8.2	100.0	0.00	220.0	8.5	898.2
7:40	8.3	100.0	0.00	220.0	8.2	898.2
7:50	8.3	100.0	0.00	220.0	9.1	898.3
8:00	8.3	100.0	0.00	220.0	8.8	898.3
8:10	8.3	100.0	0.00	210.0	10.7	898.2
8:20	8.3	100.0	0.00	210.0	11.1	898.2
8:30	8.3	100.0	0.00	210.0	10.2	898.4
8:40	8.3	100.0	0.00	210.0	9.6	898.4
8:50	8.3	100.0	0.10	210.0	10.2	898.3
9:00	8.4	100.0	0.08	210.0	10.2	898.3
9:10	8.5	100.0	0.12	220.0	9.4	898.5
9:20	8.5	100.0	0.26	210.0	10.0	898.4
9:30	8.6	100.0	0.44	210.0	9.7	898.1
9:40	8.6	100.0	0.15	210.0	9.2	897.9
9:50	8.7	100.0	0.14	210.0	9.1	897.8
10:00	8.7	100.0	0.15	210.0	8.8	898.0
10:10	8.8	100.0	0.36	210.0	8.6	897.7
10:20	8.8	100.0	0.40	210.0	7.5	897.5
10:30	8.9	100.0	0.22	210.0	8.8	897.5
10:40	9.0	100.0	0.04	210.0	8.3	897.4
10:50	9.0	100.0	0.07	210.0	8.8	897.2
11:00	9.0	100.0	0.04	210.0	9.4	897.2
11:10	8.9	100.0	0.02	210.0	8.6	897.0
11:20	8.9	100.0	0.03	210.0	8.8	896.9
11:30	9.0	100.0	0.02	210.0	7.8	896.6
11:40	9.0	100.0	0.05	200.0	7.8	896.5
11:50	8.9	100.0	0.34	200.0	8.7	896.5
12:00	8.7	100.0	0.83	200.0	8.8	896.6
12:10	8.7	100.0	0.63	210.0	8.4	896.6
12:20	8.6	100.0	0.88	210.0	8.9	896.5
12:30	8.6	100.0	0.47	210.0	8.6	896.2
12:40	8.6	100.0	0.34	210.0	8.1	896.2
12:50	8.6	100.0	0.47	210.0	7.8	895.9
13:00	8.7	100.0	0.18	210.0	8.3	895.8
13:10	8.7	100.0	0.04	210.0	9.2	895.7
13:20	8.8	100.0	0.13	210.0	8.3	895.5
13:30	8.9	100.0	0.10	210.0	9.0	895.5
13:40	8.9	100.0	0.44	200.0	8.4	895.3
13:50	8.9	100.0	0.12	200.0	8.6	895.1
14:00	9.0	100.0	0.05	200.0	8.7	895.0
14:10	9.1	100.0	0.17	200.0	8.4	895.0
14:20	9.1	100.0	0.51	210.0	9.2	895.0
14:30	9.2	100.0	0.51	210.0	8.7	894.8
14:40	9.2	100.0	0.07	200.0	8.0	894.6
14:50	9.3	100.0	0.17	210.0	8.7	894.5
15:00	9.3	100.0	0.54	210.0	8.6	894.6
15:10	9.4	100.0	0.13	210.0	8.7	894.6
15:20	9.5	100.0	0.09	220.0	8.3	894.6
15:30	9.5	100.0	0.05	220.0	7.4	894.4
15:40	9.6	100.0	0.04	210.0	6.5	894.2
15:50	9.8	100.0	0.03	210.0	9.3	894.1
16:00	9.8	100.0	0.13	210.0	8.7	894.2
16:10	9.9	100.0	0.08	210.0	8.5	894.1
16:20	9.9	100.0	0.03	210.0	8.8	893.9
16:30	10.1	100.0	0.01	210.0	9.8	893.8
16:40	10.1	100.0	0.01	210.0	10.3	893.8
16:50	10.2	100.0	0.00	210.0	10.2	893.7
17:00	10.3	100.0	0.01	210.0	10.8	893.7
17:10	10.5	100.0	0.26	210.0	12.0	893.6
17:20	10.5	100.0	0.91	210.0	12.0	893.7
17:30	10.0	100.0	0.79	210.0	14.5	893.3
17:40	10.0	100.0	0.29	220.0	10.7	893.4
17:50	10.1	100.0	0.19	220.0	8.7	893.3
18:00	10.2	100.0	0.10	220.0	8.9	893.3
18:10	10.2	100.0	0.24	220.0	10.5	893.2
18:20	10.2	100.0	0.51	220.0	10.1	893.3
18:30	10.2	100.0	0.93	220.0	8.0	893.3
18:40	10.2	100.0	0.22	230.0	6.9	893.2
18:50	10.3	100.0	0.11	220.0	8.9	893.3
19:00	10.2	100.0	0.05	230.0	7.3	893.3
19:10	10.1	100.0	0.03	220.0	7.8	893.3
19:20	10.1	100.0	0.00	220.0	7.1	893.3
19:30	10.1	100.0	0.01	220.0	8.2	893.6
19:40	9.9	100.0	0.00	220.0	8.6	893.7
19:50	9.7	100.0	0.00	220.0	9.3	893.5
20:00	9.6	100.0	0.00	220.0	8.4	893.5
20:10	9.5	100.0	0.00	210.0	8.2	893.5
20:20	9.5	100.0	0.00	220.0	8.9	893.6
20:30	9.5	100.0	0.00	210.0	9.6	893.5
20:40	9.5	100.0	0.00	220.0	10.0	893.2
20:50	9.4	100.0	0.00	220.0	9.9	893.3
21:00	9.3	100.0	0.00	210.0	10.2	893.3
21:10	9.2	100.0	0.00	210.0	9.7	893.3
21:20	9.1	100.0	0.00	210.0	10.9	893.1
21:30	9.0	100.0	0.00	210.0	10.7	892.9
21:40	8.9	100.0	0.00	210.0	11.6	893.0
21:50	8.9	100.0	0.00	210.0	11.1	892.8
22:00	8.9	100.0	0.00	210.0	11.2	892.8
22:10	8.8	100.0	0.00	210.0	10.1	892.7

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
22:20	8.8	100.0	0.00	210.0	10.0	892.8
22:30	8.6	100.0	0.00	210.0	10.9	892.8
22:40	8.4	100.0	0.00	210.0	11.3	892.7
22:50	8.4	100.0	0.00	210.0	10.4	892.8
23:00	8.3	100.0	0.00	210.0	10.0	892.8
23:10	8.2	100.0	0.00	210.0	11.4	893.1
23:20	8.1	100.0	0.00	210.0	10.3	892.8
23:30	8.1	100.0	0.00	220.0	10.8	892.8
23:40	8.0	100.0	0.00	210.0	10.2	892.6
23:50	7.9	100.0	0.00	220.0	11.0	892.6

Table L2: Locally measured meteorological data at the summit station Schmücke on 17 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	7.9	100.0	0.00	220.0	9.3	892.8
0:10	7.9	100.0	0.00	220.0	9.4	892.8
0:20	7.8	100.0	0.12	220.0	9.9	892.7
0:30	7.7	100.0	0.04	220.0	8.9	892.6
0:40	7.7	100.0	0.01	220.0	9.3	892.8
0:50	7.8	100.0	0.01	220.0	8.1	892.6
1:00	8.0	100.0	0.00	220.0	9.9	892.5
1:10	7.9	100.0	0.01	220.0	9.6	892.2
1:20	7.9	100.0	0.00	220.0	9.3	892.0
1:30	7.7	100.0	0.00	220.0	10.5	892.1
1:40	7.7	100.0	0.00	220.0	8.8	892.4
1:50	7.7	100.0	0.00	220.0	10.0	892.2
2:00	7.7	100.0	0.00	210.0	11.7	892.3
2:10	7.6	100.0	0.00	210.0	11.1	892.6
2:20	7.6	100.0	0.00	210.0	11.2	892.5
2:30	7.5	100.0	0.00	220.0	11.6	892.3
2:40	7.5	100.0	0.00	220.0	9.3	892.3
2:50	7.4	100.0	0.00	220.0	9.0	891.9
3:00	7.3	100.0	0.00	210.0	9.4	891.9
3:10	7.3	100.0	0.00	220.0	9.0	892.2
3:20	7.3	100.0	0.00	210.0	12.0	892.2
3:30	7.2	100.0	0.00	210.0	10.6	892.1
3:40	7.2	100.0	0.00	220.0	8.5	892.2
3:50	7.2	100.0	0.00	220.0	8.6	892.2
4:00	7.2	100.0	0.20	210.0	9.7	892.1
4:10	7.2	100.0	0.39	220.0	9.1	892.2
4:20	7.2	100.0	0.18	220.0	9.7	892.1
4:30	7.2	100.0	0.37	220.0	9.8	892.1
4:40	7.3	100.0	0.07	210.0	11.7	892.0
4:50	7.3	100.0	0.03	210.0	12.3	891.8
5:00	7.3	100.0	0.01	220.0	11.2	891.7
5:10	7.3	100.0	0.01	220.0	8.9	891.6
5:20	7.2	100.0	0.19	220.0	7.6	891.5
5:30	7.1	100.0	0.07	220.0	8.0	891.1
5:40	7.2	100.0	0.02	220.0	8.1	891.2
5:50	7.3	100.0	0.01	220.0	8.8	891.4
6:00	7.2	100.0	0.00	220.0	9.3	891.5
6:10	7.2	100.0	0.01	220.0	10.2	891.6
6:20	7.2	100.0	0.00	220.0	11.0	891.7
6:30	7.1	100.0	0.00	220.0	10.3	891.7
6:40	7.1	100.0	0.00	220.0	9.6	891.6
6:50	7.1	100.0	0.00	220.0	10.6	891.4
7:00	7.0	100.0	0.00	210.0	10.6	891.6
7:10	7.0	100.0	0.00	220.0	10.8	891.5
7:20	6.9	100.0	0.00	220.0	9.6	891.7
7:30	6.9	100.0	0.00	220.0	10.3	891.8
7:40	6.8	100.0	0.00	220.0	10.1	892.0
7:50	6.7	100.0	0.00	220.0	9.8	892.2
8:00	6.7	100.0	0.00	220.0	9.4	892.2
8:10	6.7	100.0	0.00	230.0	7.9	891.9
8:20	6.7	100.0	0.00	220.0	7.2	891.8
8:30	6.8	100.0	0.00	220.0	8.5	891.7
8:40	6.8	100.0	0.00	210.0	8.7	891.8
8:50	6.8	100.0	0.00	210.0	10.1	892.0
9:00	6.8	100.0	0.00	210.0	10.3	891.7
9:10	6.7	100.0	0.00	210.0	10.8	891.7
9:20	6.7	100.0	0.00	210.0	11.8	891.5
9:30	6.8	100.0	0.00	210.0	11.9	891.6
9:40	6.8	100.0	0.00	210.0	11.2	891.7
9:50	6.8	100.0	0.00	210.0	10.6	891.8
10:00	6.8	100.0	0.01	210.0	12.7	891.7
10:10	6.8	100.0	0.00	210.0	9.7	891.4
10:20	6.8	100.0	0.01	220.0	9.3	891.3
10:30	6.8	100.0	0.00	210.0	8.2	891.4
10:40	6.7	100.0	0.00	210.0	10.4	891.2
10:50	6.8	100.0	0.00	210.0	10.7	891.2
11:00	6.7	100.0	0.00	210.0	10.7	891.1
11:10	6.7	100.0	0.00	210.0	9.3	891.1
11:20	6.8	100.0	0.00	210.0	10.0	891.2
11:30	6.7	100.0	0.00	210.0	9.3	891.2
11:40	6.7	100.0	0.00	210.0	10.7	891.2
11:50	6.7	100.0	0.00	210.0	11.6	891.2
12:00	6.7	100.0	0.01	220.0	9.1	891.1
12:10	6.7	100.0	0.10	220.0	8.4	891.0
12:20	6.7	100.0	0.05	220.0	9.0	890.8
12:30	6.7	100.0	0.02	220.0	8.9	890.8
12:40	6.6	100.0	0.00	210.0	10.6	890.6
12:50	6.6	100.0	0.00	210.0	10.1	890.6
13:00	6.6	100.0	0.00	210.0	10.7	890.6
13:10	6.6	100.0	0.01	210.0	10.7	890.6
13:20	6.6	100.0	0.00	210.0	10.2	890.7
13:30	6.6	100.0	0.00	210.0	9.6	890.7
13:40	6.6	100.0	0.09	210.0	9.6	890.6
13:50	6.5	100.0	0.88	210.0	10.0	890.5
14:00	6.6	100.0	0.57	210.0	10.1	890.6
14:10	6.6	100.0	0.76	210.0	11.1	890.7
14:20	6.0	100.0	2.04	260.0	5.8	890.9
14:30	5.7	100.0	1.48	250.0	5.5	890.9
14:40	5.6	100.0	0.18	260.0	6.3	891.0
14:50	5.4	100.0	0.06	260.0	6.5	890.9
15:00	5.4	100.0	0.09	250.0	6.8	891.0
15:10	5.4	100.0	0.12	250.0	5.8	891.0
15:20	5.4	100.0	0.07	240.0	5.1	891.1
15:30	5.5	100.0	0.02	250.0	4.2	891.3
15:40	5.4	100.0	0.00	260.0	5.2	891.8
15:50	5.0	100.0	0.01	260.0	5.8	891.8
16:00	4.9	100.0	0.00	250.0	5.4	891.7
16:10	4.7	100.0	0.00	260.0	6.3	891.6
16:20	4.6	100.0	0.00	260.0	5.5	891.5
16:30	4.5	100.0	0.00	270.0	6.4	891.6
16:40	4.5	100.0	0.00	250.0	5.8	891.8

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
16:50	4.4	100.0	0.00	260.0	5.8	892.1
17:00	4.4	100.0	0.00	260.0	5.5	892.4
17:10	4.4	100.0	0.00	260.0	5.2	892.4
17:20	4.4	100.0	0.00	250.0	5.3	892.5
17:30	4.3	99.0	0.00	250.0	5.2	892.7
17:40	4.3	99.0	0.00	250.0	5.0	893.0
17:50	4.2	99.0	0.00	260.0	4.4	893.0
18:00	4.1	99.0	0.00	260.0	4.8	893.0
18:10	4.0	100.0	0.00	260.0	4.9	892.9
18:20	3.9	100.0	0.00	260.0	5.8	892.8
18:30	3.9	100.0	0.00	260.0	5.4	892.9
18:40	3.9	100.0	0.00	260.0	5.4	892.9
18:50	3.8	100.0	0.00	260.0	5.2	892.8
19:00	3.8	100.0	0.00	260.0	5.7	892.8
19:10	3.8	100.0	0.00	260.0	6.1	892.8
19:20	3.8	100.0	0.00	270.0	4.6	892.8
19:30	3.8	100.0	0.00	270.0	4.8	893.1
19:40	3.8	100.0	0.00	260.0	5.5	893.0
19:50	3.7	100.0	0.00	260.0	5.4	893.2
20:00	3.7	100.0	0.00	260.0	4.7	893.4
20:10	3.7	100.0	0.00	250.0	5.9	893.4
20:20	3.7	100.0	0.00	260.0	4.8	893.5
20:30	3.6	100.0	0.00	250.0	4.8	893.4
20:40	3.6	100.0	0.00	260.0	4.6	893.5
20:50	3.6	100.0	0.00	260.0	4.8	893.4
21:00	3.5	100.0	0.00	260.0	4.4	893.9
21:10	3.5	100.0	0.00	250.0	3.2	894.3
21:20	3.5	100.0	0.00	250.0	3.0	894.6
21:30	3.4	99.0	0.00	240.0	3.3	894.6
21:40	3.4	99.0	0.00	240.0	4.7	894.6
21:50	3.3	100.0	0.00	250.0	4.9	894.7
22:00	3.2	100.0	0.00	250.0	4.2	894.7
22:10	3.2	100.0	0.00	250.0	4.3	894.6
22:20	3.2	100.0	0.00	250.0	5.0	894.5
22:30	3.0	100.0	0.00	250.0	5.1	894.4
22:40	3.1	100.0	0.00	250.0	4.2	894.6
22:50	3.1	100.0	0.00	250.0	4.8	894.7
23:00	3.0	100.0	0.00	250.0	5.0	894.7
23:10	2.9	100.0	0.00	250.0	5.5	894.8
23:20	2.8	100.0	0.00	250.0	5.3	894.8
23:30	2.8	100.0	0.00	250.0	4.4	894.9
23:40	2.6	100.0	0.00	250.0	4.7	894.8
23:50	2.5	100.0	0.00	250.0	4.9	894.8

M: The cloud event (17-19)-10-2002

At the beginning the weather situation at the experimental site was also influenced by the frontal system over Northern Germany. During the following days the low pressure system shifted eastwards and its centre reached the Baltic States on 19 October 2002. Hence, the measurement site was less affected by frontal processes. On the backside the influence of high pressure strengthened and the weather type became anticyclonic.

The first section ended shortly due to beginning of precipitation. This was caused by a cold front crossing the experimental site. A south-westerly prefrontal flow was positioned over Germany. The dominate flow conditions were stable with wind speeds of about 10 m s^{-1} and a wind direction of approximately 215° . The analysis of the backward trajectories indicates a vertically stable advection of continentally affected air masses from the Mid-Atlantic via France. According to the satellite pictures stratiform frontal cloud banks capped the experimental site. Based on the moist lower boundary layer coupled with a locally measured LWC up to 0.25 g m^{-3} stratus clouds can be assumed.

The time period to the subsequent section of 18 October was characterised by a distinct cold snap and more westerly and weaker flow conditions. In the middle of the section the wind turned more to southwest. The backward trajectories show a cyclonic turn and an advection of air masses over the British Isles and the Low Countries to the experimental site. Within the satellite pictures residual frontal clouds with stratiform and incompact pattern in different levels can be observed. The measurements had to be stopped due to lifting of the cloud base height beyond the summit level. The different backward trajectories in comparison to those of the first section and the less orographic cloud pattern as well as the unstable local conditions are unfavourable conditions.

During the third section the experimental site was located within the cold air mass behind the trough of low pressure which had passed about 03:00 UTC. Due to the advection of cold maritime arctic air the temperature at the summit decreased to 0°C and precipitation temporarily occurred. Shortly after beginning of the third section the measurements were interrupted because of the rising cloud base height and were resumed 15 min later. The satellite pictures point out cellular cloud pattern which are characteristic for incoming polar air. They were formed above the comparatively warm Atlantic and were shifted to the experimental site where no orographic induced effects could be detected. At first the wind came from southwest, but turned to west during the measurement period. The wind speed was reduced gradually from about 5 m s^{-1} and could not be measured any longer at the summit site some hours before the end. The course of the backward trajectories does not show the change of wind direction, but the advection of air masses from the Arctic Ocean with a cyclonic turn over the North Sea. This event is particularly unsuitable for further considerations. The reasons are the completely

different weather situation on each of the three measuring days, no detectable orographic effects on clouds, repeated precipitation even within the measurement periods and temperatures around the freezing point during the last section.

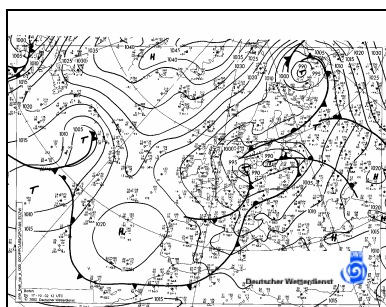


Fig. M1: Surface weather chart on 17 October 2002, 12 UTC (source: DWD).

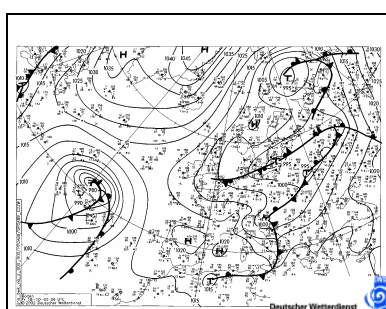


Fig. M2: Surface weather chart on 18 October 2002, 06 UTC (source: DWD).

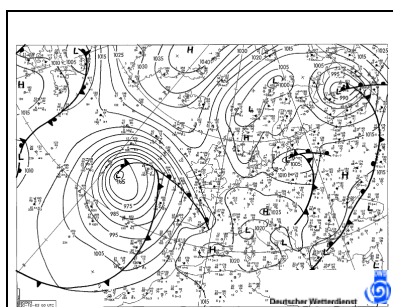


Fig. M3: Surface weather chart on 20 October 2002, 00 UTC (source: DWD).

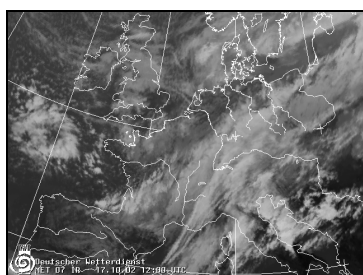


Fig. M4: IR-satellite picture on 17 October 2002, 12 UTC (source: DWD)

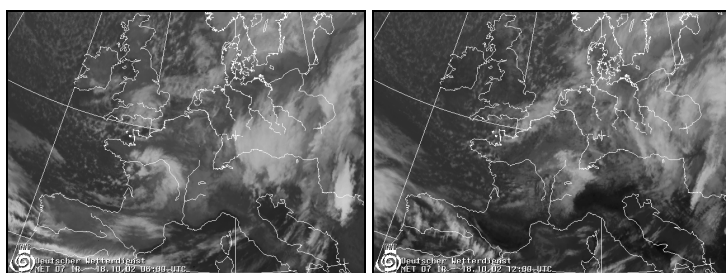
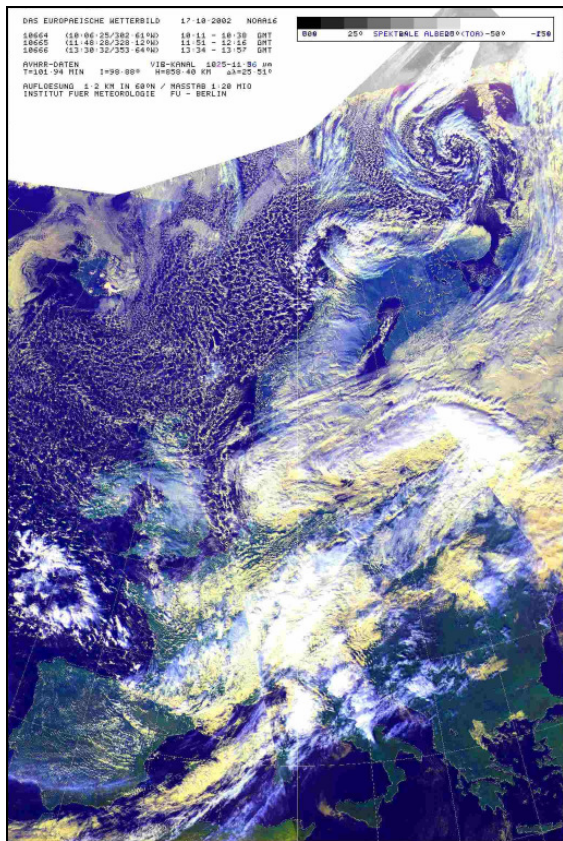


Fig. M5: IR-satellite pictures on 18 October 2002, 06 and 12 UTC (source: DWD).



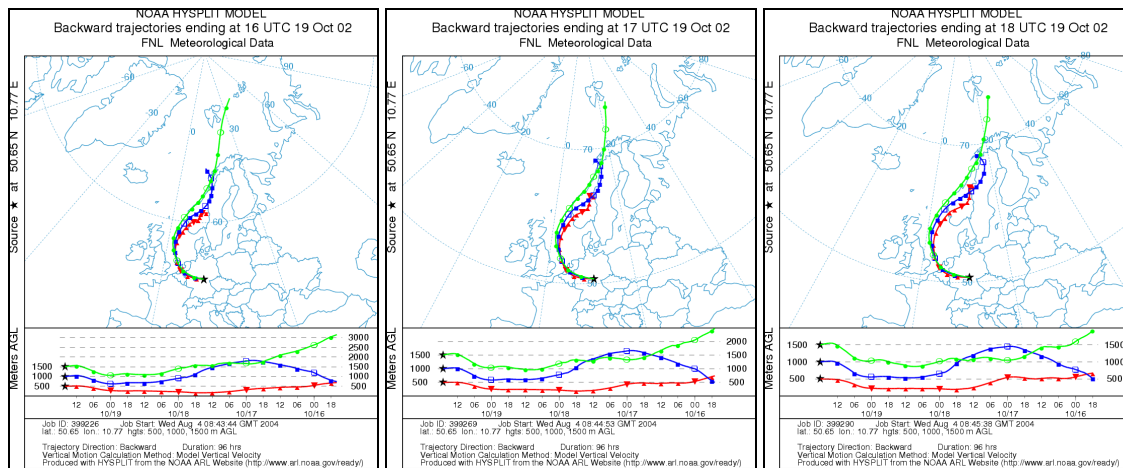


Fig. M9: Backward trajectories on 19 October 2002, 16, 17, and 18 UTC (source: NOAA ARL Website).

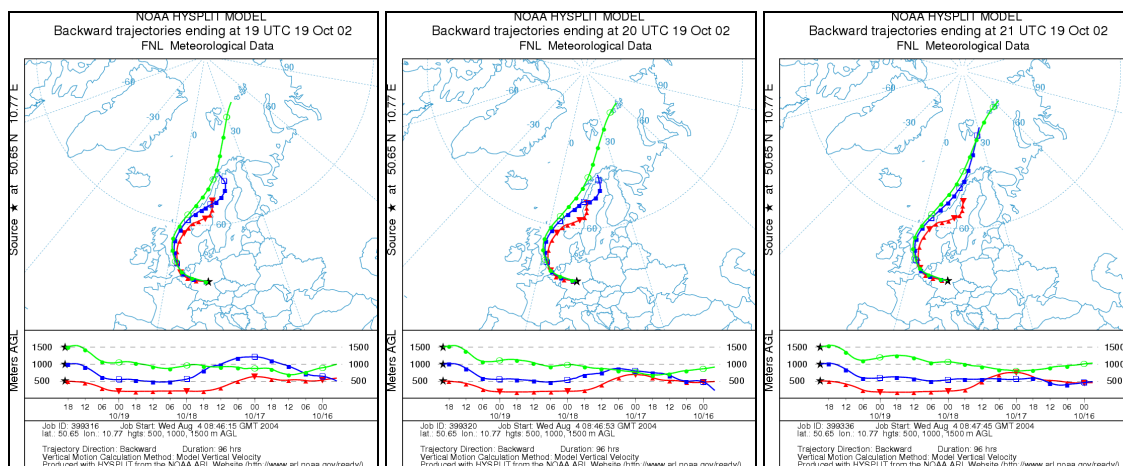


Fig. M10: Backward trajectories on 19 October 2002, 19, 20, and 21 UTC (source: NOAA ARL Website).

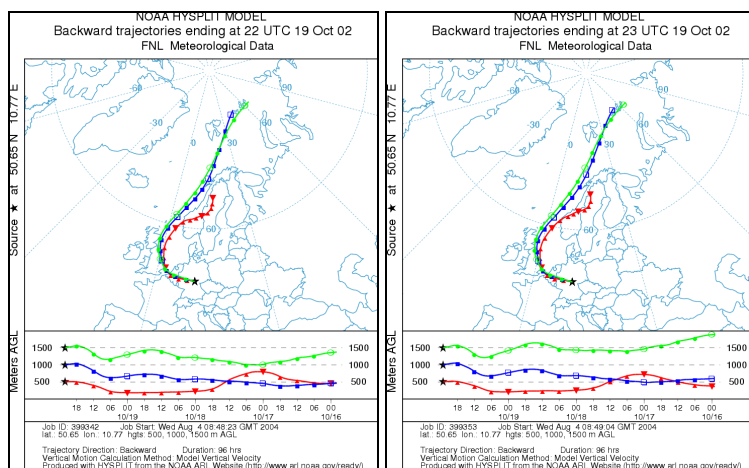


Fig. M11: Backward trajectories on 19 October 2002, 22 and 23 UTC (source: NOAA ARL Website).

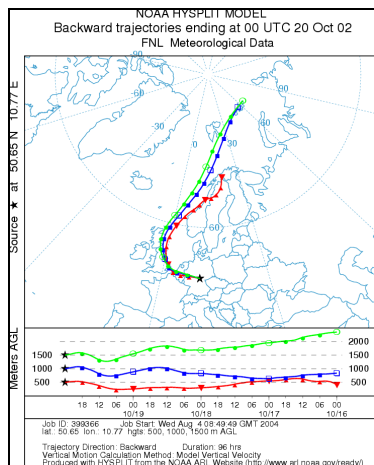


Fig. M12: Backward trajectories on 20 October 2002, 00 UTC (source: NOAA ARL Website).

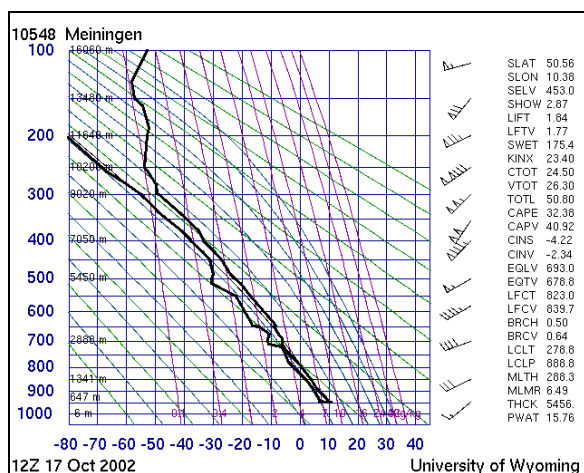


Fig. M13: Vertical rawinsonde profile of temperature and dew-point temperature on 17 October 2002, 12 UTC (source: University of Wyoming).

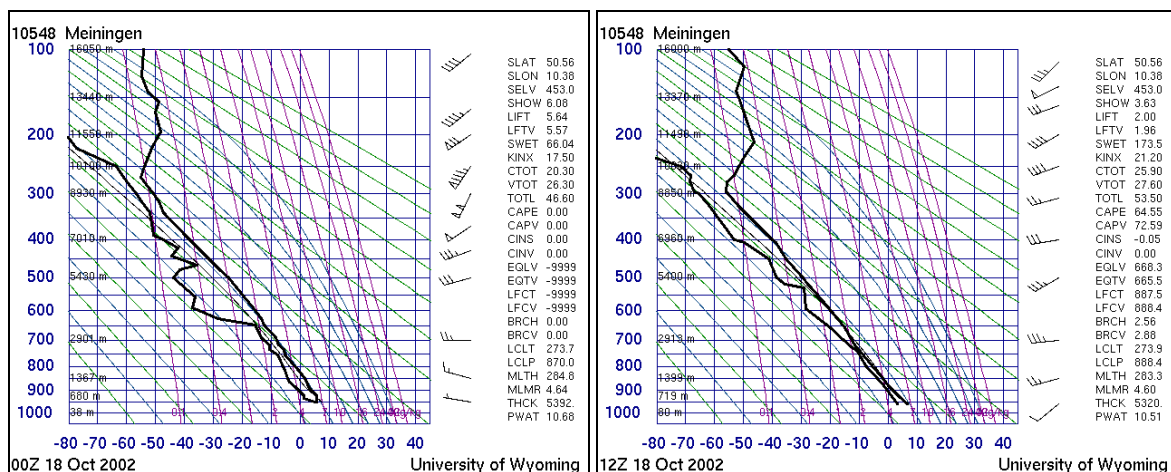


Fig. M14: Vertical rawinsonde profiles of temperature and dew-point temperature on 18 October 2002, 00 and 12 UTC (source: University of Wyoming).

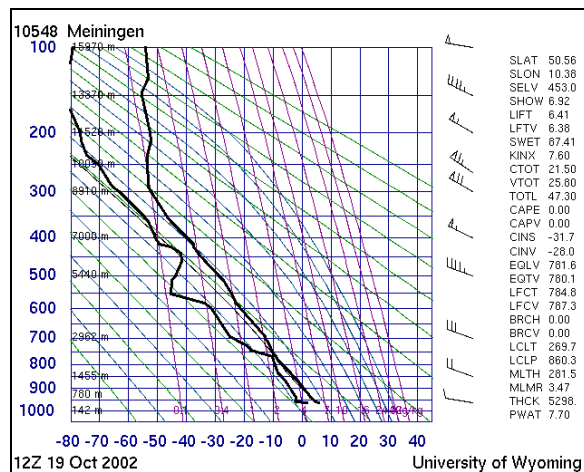


Fig. M15: Vertical rawinsonde profile of temperature and dew-point temperature on 19 October 2002, 12 UTC (source: University of Wyoming).

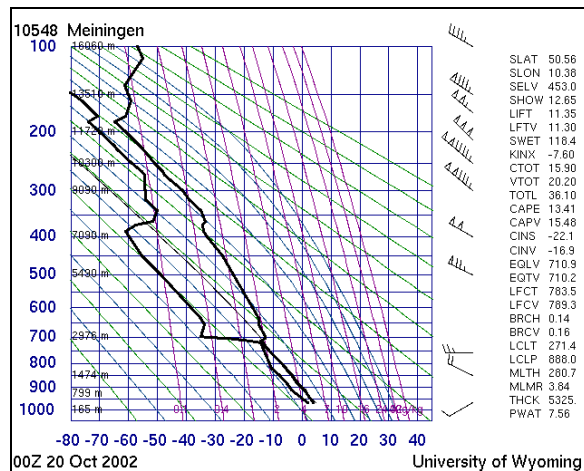


Fig. M16: Vertical rawinsonde profile of temperature and dew-point temperature on 20 October 2002, 00 UTC (source: University of Wyoming).

Table M1: Locally measured meteorological data at the summit station Schmücke on 17 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	7.9	100.0	0.00	220.0	9.3	892.8
0:10	7.9	100.0	0.00	220.0	9.4	892.8
0:20	7.8	100.0	0.12	220.0	9.9	892.7
0:30	7.7	100.0	0.04	220.0	8.9	892.6
0:40	7.7	100.0	0.01	220.0	9.3	892.8
0:50	7.8	100.0	0.01	220.0	8.1	892.6
1:00	8.0	100.0	0.00	220.0	9.9	892.5
1:10	7.9	100.0	0.01	220.0	9.6	892.2
1:20	7.9	100.0	0.00	220.0	9.3	892.0
1:30	7.7	100.0	0.00	220.0	10.5	892.1
1:40	7.7	100.0	0.00	220.0	8.8	892.4
1:50	7.7	100.0	0.00	220.0	10.0	892.2
2:00	7.7	100.0	0.00	210.0	11.7	892.3
2:10	7.6	100.0	0.00	210.0	11.1	892.6
2:20	7.6	100.0	0.00	210.0	11.2	892.5
2:30	7.5	100.0	0.00	220.0	11.6	892.3
2:40	7.5	100.0	0.00	220.0	9.3	892.3
2:50	7.4	100.0	0.00	220.0	9.0	891.9
3:00	7.3	100.0	0.00	210.0	9.4	891.9
3:10	7.3	100.0	0.00	220.0	9.0	892.2
3:20	7.3	100.0	0.00	210.0	12.0	892.2
3:30	7.2	100.0	0.00	210.0	10.6	892.1
3:40	7.2	100.0	0.00	220.0	8.5	892.2
3:50	7.2	100.0	0.00	220.0	8.6	892.2
4:00	7.2	100.0	0.20	210.0	9.7	892.1
4:10	7.2	100.0	0.39	220.0	9.1	892.2
4:20	7.2	100.0	0.18	220.0	9.7	892.1
4:30	7.2	100.0	0.37	220.0	9.8	892.1
4:40	7.3	100.0	0.07	210.0	11.7	892.0
4:50	7.3	100.0	0.03	210.0	12.3	891.8
5:00	7.3	100.0	0.01	220.0	11.2	891.7
5:10	7.3	100.0	0.01	220.0	8.9	891.6
5:20	7.2	100.0	0.19	220.0	7.6	891.5
5:30	7.1	100.0	0.07	220.0	8.0	891.1
5:40	7.2	100.0	0.02	220.0	8.1	891.2
5:50	7.3	100.0	0.01	220.0	8.8	891.4
6:00	7.2	100.0	0.00	220.0	9.3	891.5
6:10	7.2	100.0	0.01	220.0	10.2	891.6
6:20	7.2	100.0	0.00	220.0	11.0	891.7
6:30	7.1	100.0	0.00	220.0	10.3	891.7
6:40	7.1	100.0	0.00	220.0	9.6	891.6
6:50	7.1	100.0	0.00	220.0	10.6	891.4
7:00	7.0	100.0	0.00	210.0	10.6	891.6
7:10	7.0	100.0	0.00	220.0	10.8	891.5
7:20	6.9	100.0	0.00	220.0	9.6	891.7
7:30	6.9	100.0	0.00	220.0	10.3	891.8
7:40	6.8	100.0	0.00	220.0	10.1	892.0
7:50	6.7	100.0	0.00	220.0	9.8	892.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
8:00	6.7	100.0	0.00	220.0	9.4	892.2
8:10	6.7	100.0	0.00	230.0	7.9	891.9
8:20	6.7	100.0	0.00	220.0	7.2	891.8
8:30	6.8	100.0	0.00	220.0	8.5	891.7
8:40	6.8	100.0	0.00	210.0	8.7	891.8
8:50	6.8	100.0	0.00	210.0	10.1	892.0
9:00	6.8	100.0	0.00	210.0	10.3	891.7
9:10	6.7	100.0	0.00	210.0	10.8	891.7
9:20	6.7	100.0	0.00	210.0	11.8	891.5
9:30	6.8	100.0	0.00	210.0	11.9	891.6
9:40	6.8	100.0	0.00	210.0	11.2	891.7
9:50	6.8	100.0	0.00	210.0	10.6	891.8
10:00	6.8	100.0	0.01	210.0	12.7	891.7
10:10	6.8	100.0	0.00	210.0	9.7	891.4
10:20	6.8	100.0	0.01	220.0	9.3	891.3
10:30	6.8	100.0	0.00	210.0	8.2	891.4
10:40	6.7	100.0	0.00	210.0	10.4	891.2
10:50	6.8	100.0	0.00	210.0	10.7	891.2
11:00	6.7	100.0	0.00	210.0	10.7	891.1
11:10	6.7	100.0	0.00	210.0	9.3	891.1
11:20	6.8	100.0	0.00	210.0	10.0	891.2
11:30	6.7	100.0	0.00	210.0	9.3	891.2
11:40	6.7	100.0	0.00	210.0	10.7	891.2
11:50	6.7	100.0	0.00	210.0	11.6	891.2
12:00	6.7	100.0	0.01	220.0	9.1	891.1
12:10	6.7	100.0	0.10	220.0	8.4	891.0
12:20	6.7	100.0	0.05	220.0	9.0	890.8
12:30	6.7	100.0	0.02	220.0	8.9	890.8
12:40	6.6	100.0	0.00	210.0	10.6	890.6
12:50	6.6	100.0	0.00	210.0	10.1	890.6
13:00	6.6	100.0	0.00	210.0	10.7	890.6
13:10	6.6	100.0	0.01	210.0	10.7	890.6
13:20	6.6	100.0	0.00	210.0	10.2	890.7
13:30	6.6	100.0	0.00	210.0	9.6	890.7
13:40	6.6	100.0	0.09	210.0	9.6	890.6
13:50	6.5	100.0	0.88	210.0	10.0	890.5
14:00	6.6	100.0	0.57	210.0	10.1	890.6
14:10	6.6	100.0	0.76	210.0	11.1	890.7
14:20	6.0	100.0	2.04	260.0	5.8	890.9
14:30	5.7	100.0	1.48	250.0	5.5	890.9
14:40	5.6	100.0	0.18	260.0	6.3	891.0
14:50	5.4	100.0	0.06	260.0	6.5	890.9
15:00	5.4	100.0	0.09	250.0	6.8	891.0
15:10	5.4	100.0	0.12	250.0	5.8	891.0
15:20	5.4	100.0	0.07	240.0	5.1	891.1
15:30	5.5	100.0	0.02	250.0	4.2	891.3
15:40	5.4	100.0	0.00	260.0	5.2	891.8
15:50	5.0	100.0	0.01	260.0	5.8	891.8
16:00	4.9	100.0	0.00	250.0	5.4	891.7
16:10	4.7	100.0	0.00	260.0	6.3	891.6
16:20	4.6	100.0	0.00	260.0	5.5	891.5
16:30	4.5	100.0	0.00	270.0	6.4	891.6
16:40	4.5	100.0	0.00	250.0	5.8	891.8
16:50	4.4	100.0	0.00	260.0	5.8	892.1
17:00	4.4	100.0	0.00	260.0	5.5	892.4
17:10	4.4	100.0	0.00	260.0	5.2	892.4
17:20	4.4	100.0	0.00	250.0	5.3	892.5
17:30	4.3	99.0	0.00	250.0	5.2	892.7
17:40	4.3	99.0	0.00	250.0	5.0	893.0
17:50	4.2	99.0	0.00	260.0	4.4	893.0
18:00	4.1	99.0	0.00	260.0	4.8	893.0
18:10	4.0	100.0	0.00	260.0	4.9	892.9
18:20	3.9	100.0	0.00	260.0	5.8	892.8
18:30	3.9	100.0	0.00	260.0	5.4	892.9
18:40	3.9	100.0	0.00	260.0	5.4	892.9
18:50	3.8	100.0	0.00	260.0	5.2	892.8
19:00	3.8	100.0	0.00	260.0	5.7	892.8
19:10	3.8	100.0	0.00	260.0	6.1	892.8
19:20	3.8	100.0	0.00	270.0	4.6	892.8
19:30	3.8	100.0	0.00	270.0	4.8	893.1
19:40	3.8	100.0	0.00	260.0	5.5	893.0
19:50	3.7	100.0	0.00	260.0	5.4	893.2
20:00	3.7	100.0	0.00	260.0	4.7	893.4
20:10	3.7	100.0	0.00	250.0	5.9	893.4
20:20	3.7	100.0	0.00	260.0	4.8	893.5
20:30	3.6	100.0	0.00	250.0	4.8	893.4
20:40	3.6	100.0	0.00	260.0	4.6	893.5
20:50	3.6	100.0	0.00	260.0	4.8	893.4
21:00	3.5	100.0	0.00	260.0	4.4	893.9
21:10	3.5	100.0	0.00	250.0	3.2	894.3
21:20	3.5	100.0	0.00	250.0	3.0	894.6
21:30	3.4	99.0	0.00	240.0	3.3	894.6
21:40	3.4	99.0	0.00	240.0	4.7	894.6
21:50	3.3	100.0	0.00	250.0	4.9	894.7
22:00	3.2	100.0	0.00	250.0	4.2	894.7
22:10	3.2	100.0	0.00	250.0	4.3	894.6
22:20	3.2	100.0	0.00	250.0	5.0	894.5
22:30	3.0	100.0	0.00	250.0	5.1	894.4
22:40	3.1	100.0	0.00	250.0	4.2	894.6
22:50	3.1	100.0	0.00	250.0	4.8	894.7
23:00	3.0	100.0	0.00	250.0	5.0	894.7
23:10	2.9	100.0	0.00	250.0	5.5	894.8
23:20	2.8	100.0	0.00	250.0	5.3	894.8
23:30	2.8	100.0	0.00	250.0	4.4	894.9
23:40	2.6	100.0	0.00	250.0	4.7	894.8
23:50	2.5	100.0	0.00	250.0	4.9	894.8

Table M2: Locally measured meteorological data at the summit station Schmücke on 18 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	2.4	100.0	0.00	250.0	5.3	894.7
0:10	2.4	100.0	0.00	250.0	5.0	894.7
0:20	2.5	100.0	0.00	250.0	4.7	894.5
0:30	2.6	100.0	0.00	250.0	4.6	894.5
0:40	2.6	100.0	0.00	240.0	4.8	894.5
0:50	2.6	100.0	0.00	250.0	4.9	894.5
1:00	2.6	100.0	0.00	250.0	4.9	894.5
1:10	2.6	100.0	0.00	250.0	5.2	894.5
1:20	2.5	100.0	0.00	250.0	5.3	894.6
1:30	2.5	100.0	0.00	250.0	5.0	894.5
1:40	2.4	100.0	0.00	250.0	5.0	894.5
1:50	2.2	100.0	0.00	250.0	5.5	894.5
2:00	2.2	100.0	0.00	250.0	5.6	894.5
2:10	2.2	100.0	0.00	250.0	4.2	894.5
2:20	2.2	100.0	0.00	250.0	3.7	894.5

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
2:30	2.2	100.0	0.00	250.0	4.8	894.5
2:40	2.1	100.0	0.00	250.0	6.6	894.4
2:50	2.1	100.0	0.00	260.0	5.8	894.4
3:00	2.0	100.0	0.00	270.0	6.4	894.3
3:10	1.9	100.0	0.00	260.0	6.4	894.4
3:20	1.8	100.0	0.00	260.0	5.7	894.6
3:30	1.7	100.0	0.00	260.0	5.6	894.7
3:40	1.8	100.0	0.00	260.0	5.4	894.8
3:50	1.8	100.0	0.00	250.0	5.2	894.8
4:00	1.8	100.0	0.00	260.0	5.9	894.8
4:10	1.7	100.0	0.00	260.0	5.9	894.8
4:20	1.6	100.0	0.00	250.0	5.6	895.0
4:30	1.6	100.0	0.00	260.0	5.6	895.0
4:40	1.6	100.0	0.00	250.0	5.4	895.0
4:50	1.5	100.0	0.00	250.0	6.3	894.9
5:00	1.5	100.0	0.00	260.0	5.5	895.0
5:10	1.5	100.0	0.00	250.0	5.4	895.1
5:20	1.4	100.0	0.00	250.0	4.6	895.1
5:30	1.4	100.0	0.00	250.0	4.6	895.2
5:40	1.4	100.0	0.00	250.0	4.6	895.3
5:50	1.4	100.0	0.00	250.0	5.0	895.4
6:00	1.3	100.0	0.00	250.0	6.5	895.5
6:10	1.4	100.0	0.00	250.0	6.5	895.6
6:20	1.4	100.0	0.00	250.0	7.3	895.8
6:30	1.4	100.0	0.00	260.0	8.0	895.9
6:40	1.4	100.0	0.00	250.0	6.8	896.0
6:50	1.4	100.0	0.00	260.0	5.8	896.2
7:00	1.4	100.0	0.00	260.0	6.9	896.2
7:10	1.3	100.0	0.00	250.0	8.0	896.3
7:20	1.3	100.0	0.00	250.0	6.8	896.5
7:30	1.4	100.0	0.00	250.0	7.5	896.5
7:40	1.4	100.0	0.00	250.0	7.3	896.7
7:50	1.4	100.0	0.00	250.0	6.6	896.8
8:00	1.4	100.0	0.00	250.0	6.2	897.0
8:10	1.3	100.0	0.00	250.0	6.6	897.1
8:20	1.4	100.0	0.00	250.0	5.9	897.2
8:30	1.4	100.0	0.00	250.0	5.7	897.2
8:40	1.3	100.0	0.00	250.0	6.1	897.4
8:50	1.4	100.0	0.00	250.0	5.7	897.5
9:00	1.4	100.0	0.00	250.0	6.3	897.5
9:10	1.4	100.0	0.00	240.0	5.5	897.6
9:20	1.5	100.0	0.00	240.0	6.4	897.7
9:30	1.5	100.0	0.00	240.0	6.5	897.9
9:40	1.6	100.0	0.00	240.0	6.3	898.0
9:50	1.8	100.0	0.00	230.0	5.6	898.1
10:00	1.6	100.0	0.00	240.0	7.9	898.1
10:10	2.1	100.0	0.00	230.0	7.3	898.2
10:20	1.9	100.0	0.00	240.0	6.7	898.3
10:30	1.8	100.0	0.00	230.0	6.2	898.3
10:40	1.8	100.0	0.00	240.0	6.5	898.4
10:50	1.8	100.0	0.00	230.0	6.3	898.4
11:00	1.6	100.0	0.00	220.0	6.8	898.5
11:10	1.6	100.0	0.00	230.0	6.4	898.5
11:20	1.6	100.0	0.00	220.0	6.4	898.3
11:30	1.5	100.0	0.08	220.0	7.2	898.2
11:40	1.4	100.0	0.21	220.0	7.5	898.2
11:50	1.3	100.0	0.17	210.0	8.7	898.2
12:00	1.5	100.0	0.20	210.0	8.9	898.3
12:10	1.6	100.0	0.08	220.0	7.0	898.2
12:20	1.7	100.0	0.02	220.0	7.9	898.1
12:30	1.8	100.0	0.01	210.0	8.3	898.1
12:40	1.9	100.0	0.01	210.0	8.3	898.0
12:50	2.0	100.0	0.01	220.0	7.4	897.9
13:00	2.0	100.0	0.00	210.0	7.9	897.9
13:10	1.8	100.0	0.17	210.0	9.7	897.8
13:20	1.6	100.0	0.09	210.0	10.8	897.7
13:30	1.5	100.0	0.08	210.0	11.6	897.7
13:40	1.4	100.0	0.09	240.0	8.2	897.9
13:50	1.4	100.0	0.03	230.0	6.8	898.1
14:00	1.5	100.0	0.00	230.0	6.5	898.0
14:10	1.5	100.0	0.01	220.0	7.3	898.0
14:20	1.6	100.0	0.00	220.0	7.9	898.0
14:30	1.6	100.0	0.00	220.0	8.4	898.0
14:40	1.7	100.0	0.00	220.0	8.2	898.0
14:50	1.7	100.0	0.00	220.0	8.1	898.1
15:00	1.7	100.0	0.00	220.0	9.1	898.2
15:10	1.7	100.0	0.00	220.0	7.9	898.3
15:20	1.7	100.0	0.00	220.0	7.2	898.4
15:30	1.7	100.0	0.00	210.0	8.8	898.3
15:40	1.6	100.0	0.00	210.0	7.9	898.4
15:50	1.6	100.0	0.00	210.0	8.1	898.4
16:00	1.6	100.0	0.00	210.0	8.2	898.4
16:10	1.6	100.0	0.00	220.0	6.3	898.5
16:20	1.6	100.0	0.00	230.0	5.0	898.7
16:30	1.0	100.0	0.52	250.0	5.4	898.8
16:40	1.2	100.0	0.11	230.0	5.5	898.8
16:50	1.6	100.0	0.01	220.0	7.4	898.8
17:00	1.7	100.0	0.00	220.0	6.9	898.9
17:10	1.7	100.0	0.00	220.0	6.5	898.8
17:20	1.7	100.0	0.01	230.0	6.0	898.8
17:30	1.7	100.0	0.00	220.0	6.4	898.9
17:40	1.6	100.0	0.00	220.0	6.9	898.9
17:50	1.6	100.0	0.00	220.0	7.1	898.9
18:00	1.6	100.0	0.00	220.0	7.1	899.0
18:10	1.6	100.0	0.00	220.0	6.8	898.9
18:20	1.5	100.0	0.00	220.0	6.2	899.0
18:30	1.5	100.0	0.00	220.0	5.8	899.1
18:40	1.4	100.0	0.00	220.0	5.8	899.1
18:50	1.5	100.0	0.00	220.0	5.3	899.1
19:00	1.5	100.0	0.00	220.0	5.8	899.1
19:10	1.5	100.0	0.00	220.0	6.1	899.0
19:20	1.6	100.0	0.00	220.0	6.5	899.1
19:30	1.6	100.0	0.00	220.0	6.7	899.1
19:40	1.6	100.0	0.00	220.0	6.4	899.0
19:50	1.6	100.0	0.00	220.0	7.0	899.0
20:00	1.6	100.0	0.00	220.0	8.1	899.1
20:10	1.6	100.0	0.00	220.0	8.0	899.0
20:20	1.6	100.0	0.00	220.0	7.3	898.9
20:30	1.6	100.0	0.00	220.0	7.9	898.9
20:40	1.6	100.0	0.00	220.0	6.3	898.9
20:50	1.7	100.0	0.00	210.0	8.3	898.8
21:00	1.7	100.0	0.00	210.0	8.5	898.8
21:10	1.7	100.0	0.00	220.0	7.9	898.9
21:20	1.7	100.0	0.00	220.0	8.9	898.7
21:30	1.7	100.0	0.00	220.0	7.5	898.7
21:40	1.7	100.0	0.00	220.0	8.0	898.6
21:50	1.7	100.0	0.00	220.0	7.9	898.6
22:00	1.7	100.0	0.00	220.0	8.7	898.7

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
22:10	1.8	100.0	0.00	210.0	8.8	898.6
22:20	1.8	100.0	0.00	220.0	8.5	898.5
22:30	1.8	100.0	0.00	220.0	8.3	898.5
22:40	1.8	100.0	0.00	220.0	9.1	898.3
22:50	1.8	100.0	0.00	220.0	9.0	898.2
23:00	1.8	100.0	0.00	210.0	9.4	898.1
23:10	1.8	100.0	0.00	220.0	9.1	898.1
23:20	1.9	100.0	0.00	220.0	8.7	898.0
23:30	1.9	100.0	0.00	220.0	8.9	898.0
23:40	1.9	100.0	0.00	210.0	9.6	897.9
23:50	1.8	100.0	0.00	220.0	10.5	897.8

Table M3: Locally measured meteorological data at the summit station Schmücke on 19 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	1.8	100.0	0.00	210.0	10.4	897.7
0:10	1.9	100.0	0.00	220.0	11.0	897.7
0:20	2.0	100.0	0.00	220.0	10.7	897.7
0:30	2.1	100.0	0.00	220.0	9.9	897.8
0:40	2.1	100.0	0.00	210.0	11.5	897.7
0:50	2.0	100.0	0.02	210.0	12.1	897.6
1:00	2.0	100.0	0.30	210.0	11.3	897.6
1:10	2.0	100.0	0.22	210.0	10.2	897.6
1:20	2.1	100.0	0.21	210.0	10.7	897.5
1:30	2.1	100.0	0.18	210.0	9.8	897.2
1:40	2.0	100.0	0.29	210.0	10.9	897.2
1:50	2.0	100.0	0.21	210.0	11.2	897.1
2:00	2.0	100.0	0.42	210.0	11.7	897.1
2:10	2.1	100.0	0.21	210.0	11.8	897.1
2:20	2.0	100.0	0.11	220.0	9.9	897.2
2:30	2.1	100.0	0.10	220.0	8.9	897.1
2:40	2.1	100.0	0.09	220.0	8.2	897.1
2:50	2.1	100.0	0.12	220.0	8.7	897.1
3:00	2.1	100.0	0.16	220.0	8.9	897.1
3:10	2.0	100.0	0.24	220.0	9.4	897.1
3:20	1.6	100.0	0.29	250.0	7.4	897.5
3:30	0.9	100.0	0.10	270.0	6.0	897.9
3:40	0.4	99.0	0.35	270.0	5.0	898.2
3:50	0.1	100.0	0.27	280.0	3.7	898.5
4:00	0.0	100.0	0.30	290.0	3.2	898.6
4:10	0.0	100.0	0.10	290.0	4.2	898.8
4:20	0.0	100.0	0.10	290.0	4.0	898.9
4:30	0.0	100.0	0.10	290.0	4.0	899.1
4:40	0.0	100.0	0.10	280.0	4.1	899.3
4:50	0.0	100.0	0.08	270.0	4.2	899.5
5:00	-0.1	100.0	0.08	270.0	4.0	899.6
5:10	0.0	100.0	0.06	270.0	4.3	899.9
5:20	0.0	100.0	0.00	270.0	4.6	900.1
5:30	0.0	100.0	0.01	270.0	5.2	900.1
5:40	0.0	100.0	0.05	270.0	4.8	900.3
5:50	0.0	100.0	0.02	270.0	5.0	900.5
6:00	0.0	100.0	0.00	280.0	5.0	900.8
6:10	0.0	100.0	0.05	270.0	4.0	900.9
6:20	0.0	100.0	0.02	270.0	5.0	901.1
6:30	0.0	100.0	0.01	270.0	4.5	901.3
6:40	0.0	100.0	0.00	270.0	4.7	901.5
6:50	0.0	100.0	0.01	270.0	4.2	901.8
7:00	0.0	100.0	0.03	270.0	4.5	901.9
7:10	0.0	100.0	0.11	260.0	4.7	902.0
7:20	0.0	100.0	0.08	260.0	4.9	902.2
7:30	0.0	100.0	0.01	260.0	5.2	902.5
7:40	0.0	100.0	0.00	260.0	5.8	902.7
7:50	0.0	100.0	0.00	250.0	5.4	902.8
8:00	0.0	100.0	0.01	270.0	5.3	903.0
8:10	0.0	100.0	0.00	270.0	5.9	903.2
8:20	0.1	100.0	0.00	250.0	4.9	903.3
8:30	0.1	100.0	0.00	260.0	5.8	903.3
8:40	0.1	100.0	0.00	250.0	5.4	903.6
8:50	0.1	100.0	0.00	260.0	5.5	903.8
9:00	0.1	100.0	0.00	260.0	4.8	904.0
9:10	0.2	100.0	0.01	260.0	5.8	904.1
9:20	0.2	100.0	0.00	260.0	5.3	904.2
9:30	0.2	100.0	0.01	260.0	4.8	904.3
9:40	0.2	100.0	0.05	260.0	5.6	904.5
9:50	0.2	100.0	0.04	260.0	5.4	904.6
10:00	0.3	100.0	0.02	260.0	5.9	904.8
10:10	0.2	100.0	0.03	260.0	6.3	904.8
10:20	0.4	99.0	0.00	250.0	5.5	905.0
10:30	0.6	99.0	0.00	250.0	5.9	905.0
10:40	0.7	99.0	0.01	260.0	6.5	905.1
10:50	0.4	99.0	0.01	270.0	5.8	905.2
11:00	0.2	100.0	0.15	270.0	5.9	905.3
11:10	0.9	100.0	0.04	260.0	4.7	905.3
11:20	1.3	100.0	0.01	260.0	5.1	905.3
11:30	1.2	100.0	0.00	250.0	5.7	905.3
11:40	1.0	100.0	0.00	240.0	5.8	905.4
11:50	0.5	99.0	0.04	260.0	6.6	905.6
12:00	1.2	100.0	0.01	260.0	5.5	905.6
12:10	1.3	100.0	0.00	250.0	5.8	905.7
12:20	1.3	100.0	0.00	250.0	6.4	905.7
12:30	1.4	100.0	0.01	260.0	5.2	905.7
12:40	1.3	100.0	0.00	240.0	5.4	905.8
12:50	1.2	100.0	0.00	240.0	5.6	906.0
13:00	1.2	100.0	0.00	240.0	5.5	905.9
13:10	1.3	100.0	0.00	240.0	4.3	906.0
13:20	1.5	100.0	0.00	230.0	5.7	906.1
13:30	1.2	100.0	0.00	240.0	6.0	906.1
13:40	1.2	100.0	0.00	240.0	5.2	906.1
13:50	0.9	100.0	0.12	250.0	5.7	906.2
14:00	0.5	99.0	0.26	250.0	5.3	906.4
14:10	0.9	100.0	0.12	250.0	4.7	906.3
14:20	1.3	100.0	0.01	240.0	4.6	906.2
14:30	1.1	100.0	0.00	240.0	4.7	906.2
14:40	1.1	100.0	0.09	240.0	4.7	906.3
14:50	0.9	100.0	0.12	250.0	5.3	906.3
15:00	1.0	100.0	0.02	250.0	5.0	906.3
15:10	1.1	100.0	0.00	240.0	4.8	906.4
15:20	1.1	100.0	0.01	230.0	4.9	906.4
15:30	1.1	100.0	0.00	240.0	4.7	906.5
15:40	1.0	100.0	0.00	230.0	5.1	906.5
15:50	1.0	100.0	0.00	230.0	5.0	906.7
16:00	0.9	100.0	0.00	230.0	5.0	906.7
16:10	0.9	100.0	0.00	240.0	5.2	906.7
16:20	0.8	100.0	0.01	240.0	5.2	906.8
16:30	0.7	99.0	0.04	240.0	5.1	907.0

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
16:40	0.7	99.0	0.07	240.0	6.2	907.1
16:50	0.7	99.0	0.02	240.0	5.7	907.3
17:00	0.7	99.0	0.00	240.0	5.3	907.4
17:10	0.7	99.0	0.01	240.0	5.7	907.4
17:20	0.7	99.0	0.00	240.0	5.5	907.5
17:30	0.6	99.0	0.00	240.0	5.5	907.6
17:40	0.6	99.0	0.00	240.0	4.7	907.6
17:50	0.6	99.0	0.00	240.0	4.6	907.5
18:00	0.6	99.0	0.00	240.0	5.1	907.5
18:10	0.5	99.0	0.00	240.0	5.2	907.4
18:20	0.6	99.0	0.00	250.0	5.1	907.4
18:30	0.6	99.0	0.00	250.0	5.5	907.3
18:40	0.5	99.0	0.00	250.0	6.7	907.3
18:50	0.4	99.0	0.03	260.0	6.3	907.3
19:00	0.2	100.0	0.13	250.0	5.8	907.4
19:10	0.1	100.0	0.03	250.0	5.4	907.3
19:20	0.1	100.0	0.06	260.0	5.6	907.6
19:30	0.1	100.0	0.06	260.0	5.4	907.6
19:40	0.1	100.0	0.03	250.0	4.9	907.6
19:50	0.2	100.0	0.00	240.0	4.3	907.6
20:00	0.2	100.0	0.00	240.0	5.5	907.6
20:10	0.2	100.0	0.01	250.0	6.1	907.7
20:20	0.2	100.0	0.00	250.0	6.0	907.7
20:30	0.1	100.0	0.00	260.0	5.8	907.8
20:40	0.1	100.0	0.00	250.0	4.7	907.8
20:50	0.1	100.0	0.00	250.0	4.3	907.8
21:00	0.0	100.0	0.01	250.0	5.1	907.8
21:10	0.0	100.0	0.02	250.0	3.6	907.7
21:20	0.0	100.0	0.07	250.0	3.3	907.6
21:30	0.0	100.0	0.06	250.0	4.4	907.6
21:40	0.0	100.0	0.06	260.0	4.5	907.6
21:50	0.0	100.0	0.02	250.0	3.3	907.6
22:00	0.0	100.0	0.02	230.0	2.7	907.5
22:10	0.0	100.0	0.01	230.0	0.7	907.5
22:20	0.1	100.0	0.01	calm	0.0	907.6
22:30	0.1	100.0	0.00	calm	0.0	907.6
22:40	0.1	100.0	0.00	calm	0.0	907.6
22:50	0.1	100.0	0.01	calm	0.0	907.7
23:00	0.0	100.0	0.00	calm	0.0	907.7
23:10	0.0	100.0	0.00	calm	0.0	907.8
23:20	0.0	100.0	0.00	calm	0.0	907.8
23:30	0.0	100.0	0.00	calm	0.0	907.8
23:40	0.0	100.0	0.00	calm	0.0	907.7
23:50	0.0	100.0	0.00	calm	0.0	907.8

N: The cloud event (21-24)-10-2002

This cloud event consists of three sections and the weather situation was controlled by a distinct vortex shifting from the west coast of Ireland to the Norwegian Sea. On the front side of this cyclone a south-westerly weather type was established with an intensive advection of warm subtropical air masses. Due to the shift of the low the flow turned continuously to west, the synoptical situation changed to a west weather type by 23 October and thereafter a totally different air mass crossed the experimental site during the last section.

During the first section the experimental site was located in the warm sector. The stable advection of subtropical air was shortly interrupted as a consequence of a weak upper-level cold front passage, which was associated with a frontal wave over the Swiss Alps. The coupled precipitation caused the discontinuity of measurements. In the satellite pictures just upper level cloud banks can be seen. These capped the clouds below but low stratiform cloudiness may be possible according to an inversion at about 900 hPa and low cloud base height. The warm air advection is also reflected by the backward trajectories which imply a continentally originated incoming aerosol. During the last two sections the experimental site was located in the cold maritime air behind the cold front. Within this air mass shallow cellular cloud pattern were formed in which local showers were embedded. Because of these showers the measurement period had to be discontinued for about 2 hours. Between these two sections the wind turned slightly to west and increased to approximately 5 m s^{-1} . In the infrared satellite picture of 00:00 UTC a low level stratus bank can be seen above the mountain range. Later pictures also show cumuliform cloudiness. While the cloud base height was about 180 m during the two sections the summit came out of cloud at the end of the cloud event so that the measurements had to be stopped. In conclusion, the existence of an orographic cloud especially on 23/24 October 2002 could be confirmed. But the partitioning caused by frontal precipitation and the tendency to westerly wind directions is an argument against this cloud event.

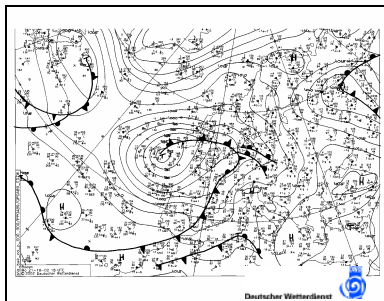


Fig. N1: Surface weather chart on 21 October 2002, 18 UTC (source: DWD).

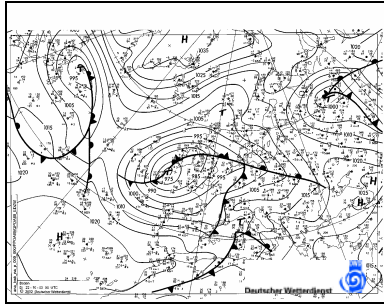


Fig. N2: Surface weather chart on 22 October 2002, 00 UTC (source: DWD).

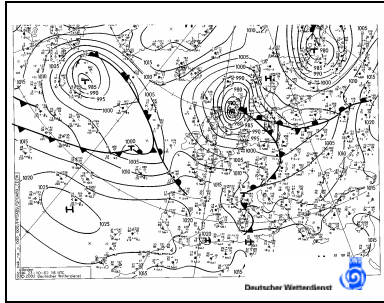


Fig. N3: Surface weather chart on 23 October 2002, 18 UTC (source: DWD).

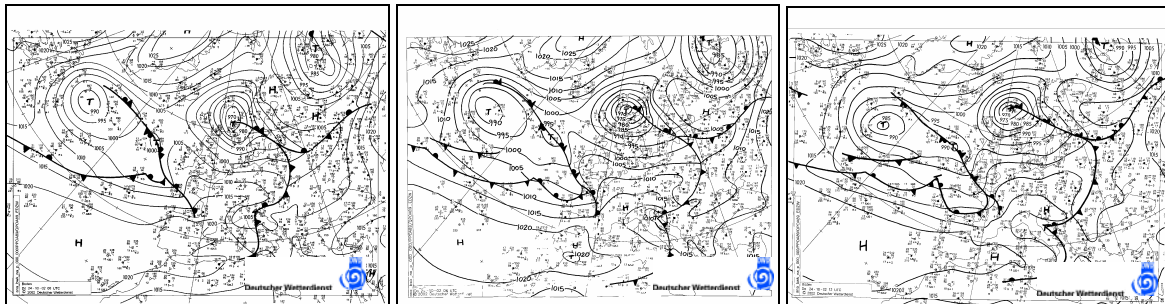


Fig. N4: Surface weather charts on 24 October 2002, 00, 06, and 12 UTC (source: DWD).

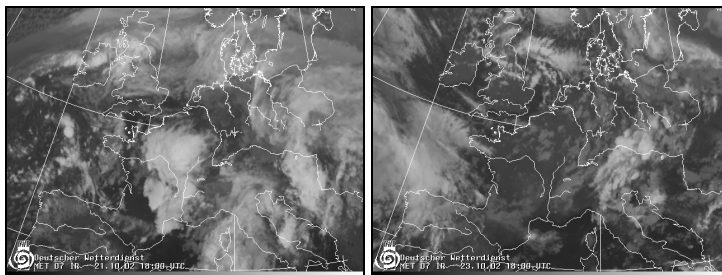


Fig. N5: IR-satellite pictures on 21 and 23 October 2002, 18 UTC (source: DWD).

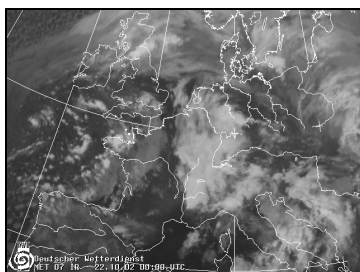


Fig. N6: VIS-satellite picture on 22 October 2002, 00 UTC (source: DWD).

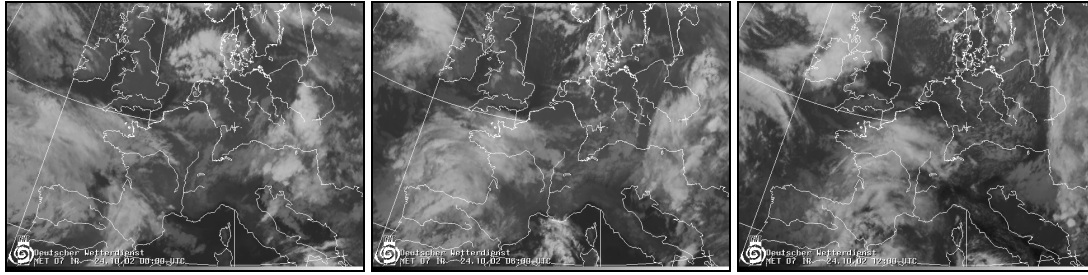


Fig. N7: VIS-satellite pictures on 24 October 2002, 00, 06, and 12 UTC (source: DWD).

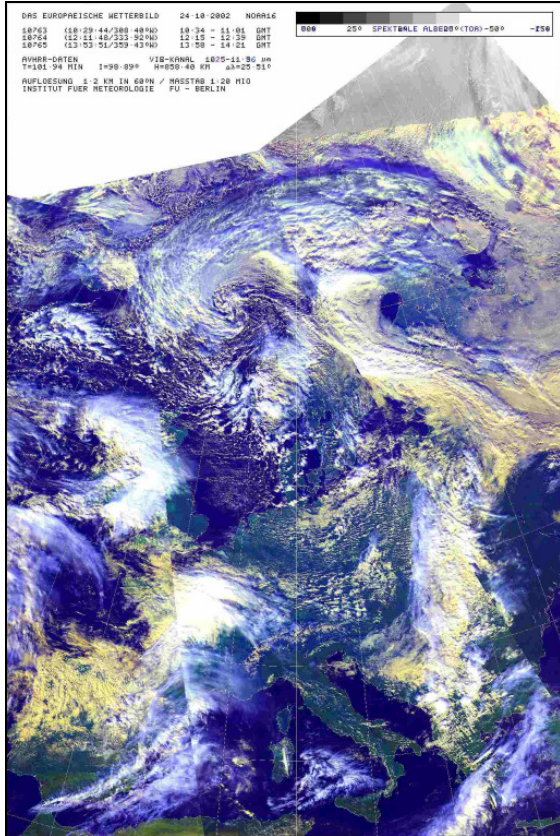


Fig. N8: NOAA satellite picture on 24 October 2002 (source: Berliner Wetterkarte, 2001).

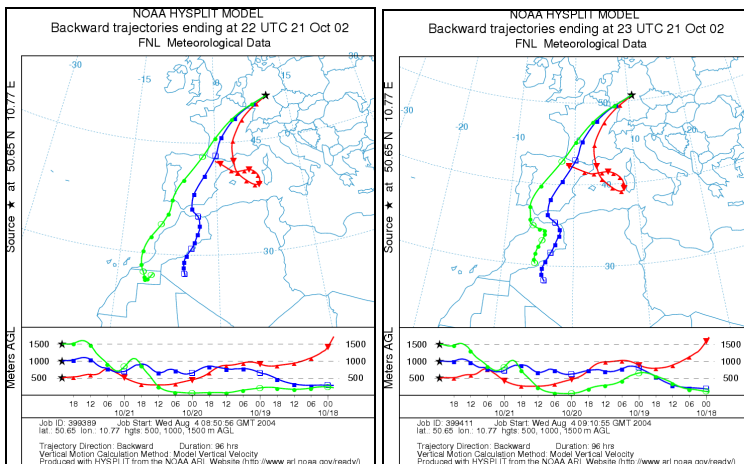


Fig. N9: Backward trajectories on 21 October 2002, 22 and 23 UTC (source: NOAA ARL Website).

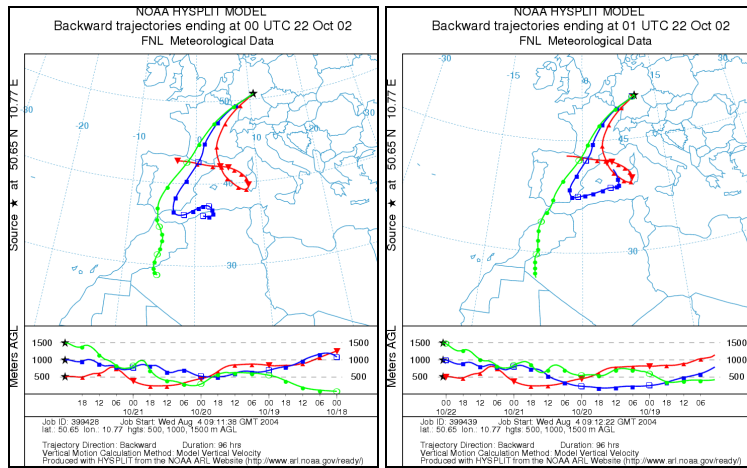


Fig. N10: Backward trajectories on 22 October 2002, 00 and 01 UTC (source: NOAA ARL Website).

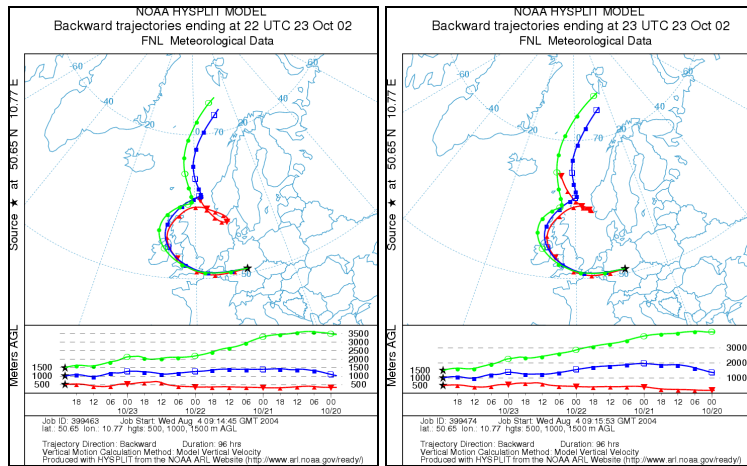


Fig. N11: Backward trajectories on 23 October 2002, 22 and 23 UTC (source: NOAA ARL Website).

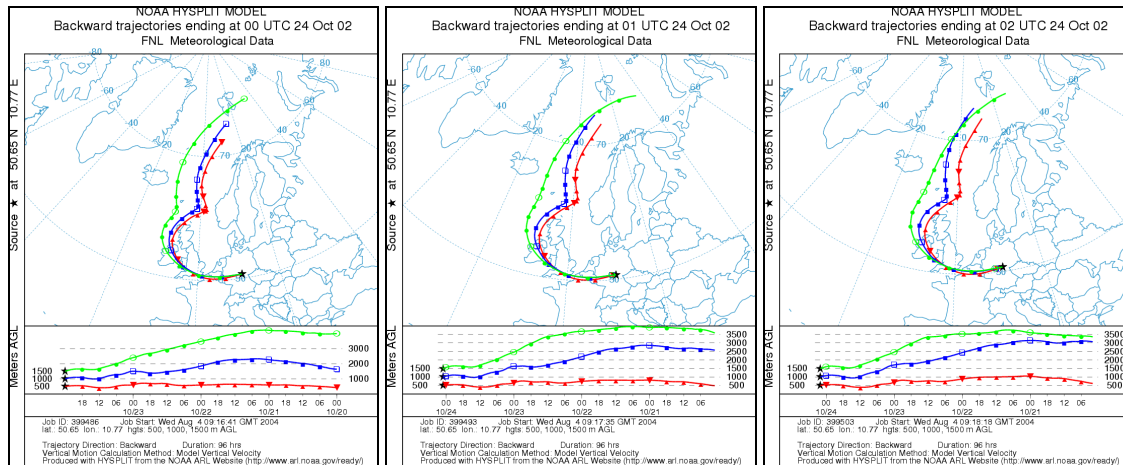


Fig. N12: Backward trajectories on 24 October 2002, 00, 01 and 02 UTC (source: NOAA ARL Website).

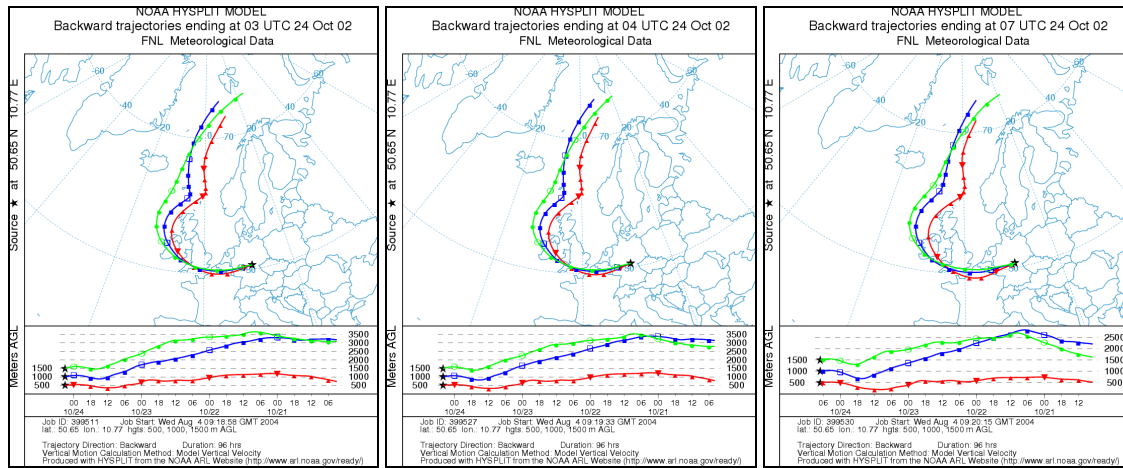


Fig. N13: Backward trajectories on 24 October 2002, 03, 04 and 07 UTC (source: NOAA ARL Website).

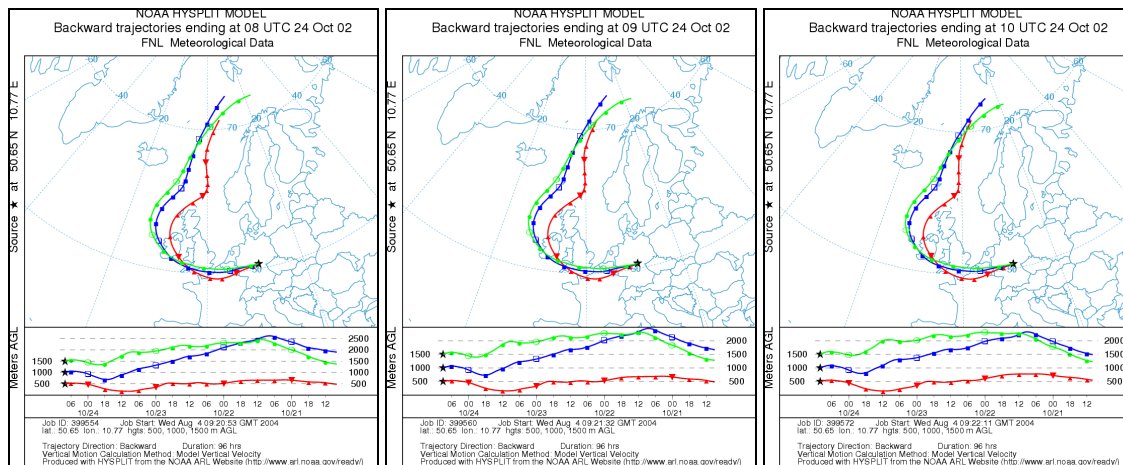


Fig. N14: Backward trajectories on 24 October 2002, 08, 09, and 10 UTC (source: NOAA ARL Website).

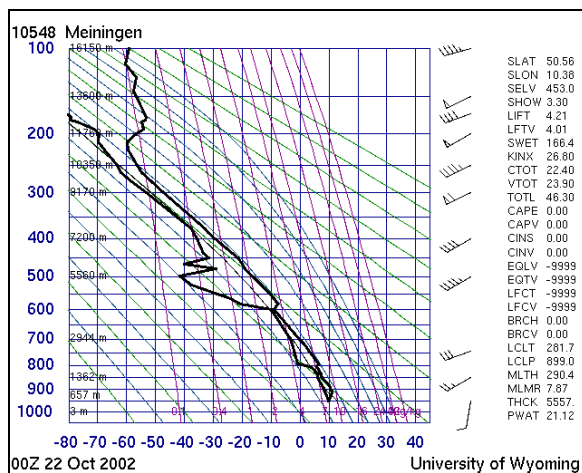


Fig. N15: Vertical rawinsonde profile of temperature and dew-point temperature on 22 October 2002, 00 UTC (source: University of Wyoming).

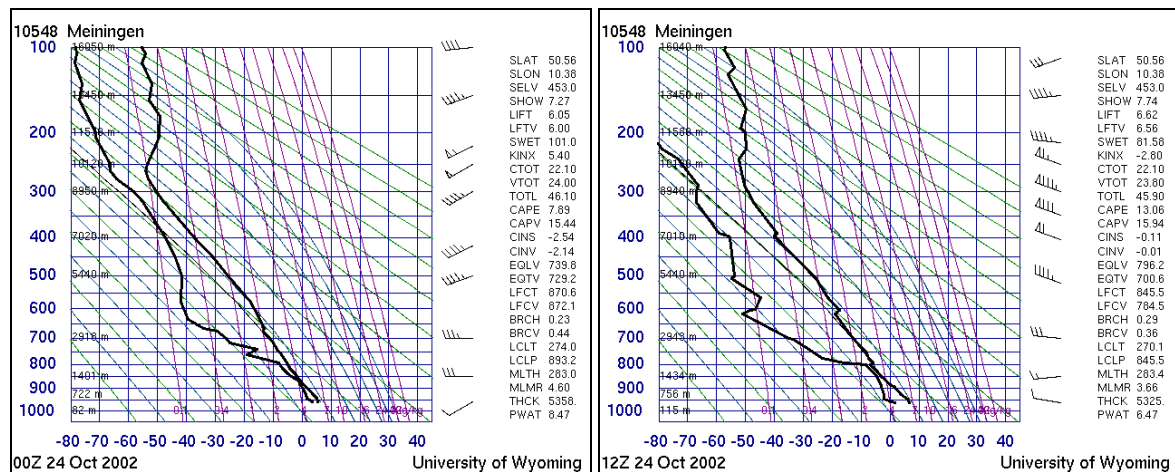


Fig. N16: Vertical rawinsonde profile of temperature and dew-point temperature on 24 October 2002, 00 and 12 UTC (source: University of Wyoming).

Table N1: Locally measured meteorological data at the summit station Schmücke on 21 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	0.3	100.0	0.00	170.0	4.4	903.2
0:10	0.3	99.0	0.00	170.0	4.0	903.2
0:20	0.4	99.0	0.00	170.0	4.9	902.9
0:30	0.5	99.0	0.00	160.0	4.4	902.5
0:40	0.5	99.0	0.00	160.0	4.7	902.5
0:50	0.6	99.0	0.00	170.0	5.2	902.6
1:00	0.4	99.0	0.00	170.0	4.3	902.5
1:10	0.6	99.0	0.00	200.0	4.0	902.8
1:20	0.7	99.0	0.00	210.0	5.0	902.8
1:30	0.6	99.0	0.00	200.0	5.2	902.3
1:40	0.7	99.0	0.00	180.0	5.8	901.4
1:50	0.7	99.0	0.01	160.0	5.6	900.6
2:00	0.7	99.0	0.12	160.0	5.9	900.3
2:10	0.7	99.0	0.03	170.0	6.1	900.2
2:20	0.6	99.0	0.01	180.0	6.4	900.7
2:30	0.6	99.0	0.00	200.0	5.0	900.6
2:40	0.7	99.0	0.00	190.0	5.5	900.4
2:50	0.7	99.0	0.00	190.0	6.1	900.2
3:00	0.8	97.0	0.00	190.0	5.8	899.9
3:10	0.6	99.0	0.00	200.0	6.2	899.7
3:20	0.5	99.0	0.00	200.0	6.8	899.8
3:30	0.6	97.0	0.00	190.0	8.1	899.8
3:40	0.6	97.0	0.00	190.0	7.2	899.6
3:50	0.7	96.0	0.00	200.0	5.5	899.4
4:00	1.0	91.0	0.00	200.0	6.5	899.5
4:10	1.1	93.0	0.00	200.0	5.4	899.3
4:20	1.4	92.0	0.00	200.0	6.8	898.9
4:30	1.4	92.0	0.00	190.0	7.1	898.9
4:40	1.9	89.0	0.00	200.0	7.0	898.8
4:50	2.0	88.0	0.00	190.0	6.9	898.6
5:00	1.9	88.0	0.00	200.0	6.7	898.6
5:10	1.8	89.0	0.00	210.0	6.5	898.8
5:20	1.6	91.0	0.00	210.0	6.1	898.7
5:30	1.5	92.0	0.00	210.0	5.3	898.5
5:40	1.7	91.0	0.00	200.0	5.2	898.4
5:50	1.8	89.0	0.00	210.0	6.4	898.4
6:00	1.7	91.0	0.00	210.0	6.3	898.3
6:10	1.5	92.0	0.00	210.0	5.2	898.2
6:20	1.5	92.0	0.00	190.0	6.3	897.9
6:30	1.8	89.0	0.00	200.0	7.3	897.8
6:40	1.8	91.0	0.00	200.0	6.6	897.8
6:50	1.7	91.0	0.00	210.0	6.4	897.8
7:00	1.7	94.0	0.00	200.0	7.5	897.7
7:10	1.8	92.0	0.00	200.0	7.3	897.5
7:20	1.9	92.0	0.00	200.0	7.0	897.3
7:30	2.1	91.0	0.00	200.0	7.3	897.3
7:40	2.2	91.0	0.00	200.0	7.7	897.0
7:50	2.2	91.0	0.00	200.0	7.0	896.9
8:00	2.2	92.0	0.00	200.0	6.3	896.8
8:10	2.4	91.0	0.00	190.0	6.5	896.5
8:20	2.5	90.0	0.00	200.0	6.5	896.3
8:30	2.6	91.0	0.00	210.0	6.8	896.4
8:40	2.7	91.0	0.00	210.0	6.6	896.1
8:50	2.5	91.0	0.00	220.0	7.0	896.0
9:00	2.5	94.0	0.00	210.0	7.2	895.9
9:10	2.2	95.0	0.00	210.0	7.9	896.0
9:20	2.2	97.0	0.00	210.0	7.8	896.0
9:30	2.2	99.0	0.00	210.0	7.6	896.1
9:40	2.2	99.0	0.00	210.0	7.1	896.0
9:50	2.0	99.0	0.00	210.0	6.6	896.0
10:00	1.9	99.0	0.00	210.0	7.0	896.0
10:10	1.9	100.0	0.01	200.0	6.8	896.0
10:20	1.9	100.0	0.00	210.0	6.4	895.9
10:30	2.0	100.0	0.00	210.0	6.7	895.9
10:40	2.2	100.0	0.07	210.0	5.9	895.9
10:50	2.3	100.0	0.03	210.0	4.6	895.9
11:00	2.5	100.0	0.01	210.0	4.4	895.9
11:10	2.7	100.0	0.06	210.0	1.8	896.0
11:20	2.8	100.0	0.05	210.0	4.2	896.0
11:30	2.9	100.0	0.01	200.0	4.1	896.0
11:40	2.9	100.0	0.02	210.0	4.3	895.9
11:50	3.1	99.0	0.23	210.0	5.0	895.8
12:00	3.0	99.0	0.33	210.0	5.0	895.8
12:10	3.0	99.0	0.46	210.0	5.1	895.7
12:20	2.9	100.0	0.24	210.0	5.2	895.6
12:30	3.0	99.0	0.09	210.0	4.9	895.5
12:40	3.0	99.0	0.10	200.0	4.4	895.3
12:50	3.2	99.0	0.17	210.0	4.7	895.2
13:00	3.3	99.0	0.09	210.0	4.8	895.1
13:10	3.6	100.0	0.19	210.0	5.3	895.1
13:20	3.7	100.0	0.10	210.0	4.8	895.1

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
13:30	3.8	100.0	0.10	210.0	5.4	895.0
13:40	4.0	100.0	0.10	210.0	6.5	895.1
13:50	4.0	100.0	0.13	210.0	7.2	895.0
14:00	4.0	100.0	0.09	220.0	7.0	895.0
14:10	3.9	100.0	0.08	210.0	6.8	895.1
14:20	4.0	100.0	0.10	210.0	7.1	895.0
14:30	4.0	100.0	0.08	220.0	7.0	895.0
14:40	3.9	100.0	0.06	220.0	7.5	894.9
14:50	3.9	100.0	0.03	220.0	6.9	894.9
15:00	4.0	100.0	0.02	210.0	7.4	894.9
15:10	4.1	99.0	0.10	210.0	6.8	894.7
15:20	4.2	99.0	0.30	210.0	6.6	894.7
15:30	4.2	99.0	0.46	220.0	6.8	894.6
15:40	4.4	100.0	0.29	220.0	6.6	894.5
15:50	4.7	100.0	0.11	220.0	6.4	894.4
16:00	4.9	100.0	0.07	210.0	6.7	894.4
16:10	5.1	100.0	0.07	210.0	6.9	894.4
16:20	5.4	100.0	0.02	220.0	7.3	894.4
16:30	5.3	100.0	0.02	210.0	7.0	894.3
16:40	5.4	100.0	0.02	210.0	7.1	894.4
16:50	5.4	100.0	0.01	210.0	5.8	894.4
17:00	5.5	100.0	0.00	210.0	5.0	894.4
17:10	5.6	100.0	0.01	210.0	4.9	894.5
17:20	5.8	100.0	0.01	210.0	5.7	894.6
17:30	5.9	100.0	0.00	210.0	5.8	894.5
17:40	6.1	100.0	0.01	210.0	7.3	894.5
17:50	6.2	100.0	0.01	210.0	7.7	894.3
18:00	6.3	100.0	0.00	210.0	7.5	894.3
18:10	6.4	100.0	0.01	210.0	8.4	894.2
18:20	6.4	100.0	0.01	210.0	8.6	894.1
18:30	6.6	100.0	0.01	210.0	8.2	893.9
18:40	6.8	100.0	0.00	210.0	8.5	893.6
18:50	7.0	100.0	0.01	210.0	8.1	893.6
19:00	7.0	100.0	0.01	210.0	9.5	893.6
19:10	7.0	100.0	0.01	210.0	9.6	893.4
19:20	7.1	100.0	0.01	210.0	9.5	893.3
19:30	7.3	100.0	0.00	210.0	9.7	893.2
19:40	7.5	100.0	0.01	210.0	11.2	893.2
19:50	7.6	100.0	0.00	210.0	10.5	893.2
20:00	7.7	100.0	0.00	220.0	11.0	893.1
20:10	7.6	100.0	0.01	220.0	9.9	893.1
20:20	7.6	100.0	0.00	220.0	10.2	893.2
20:30	7.7	100.0	0.01	220.0	9.3	893.2
20:40	7.9	100.0	0.00	220.0	8.6	893.2
20:50	8.1	100.0	0.01	220.0	9.5	893.2
21:00	8.1	100.0	0.00	220.0	9.7	893.1
21:10	8.1	100.0	0.01	220.0	8.3	893.2
21:20	8.1	100.0	0.00	220.0	8.3	893.2
21:30	8.2	100.0	0.00	220.0	8.4	893.1
21:40	8.2	100.0	0.00	220.0	8.3	893.0
21:50	8.3	100.0	0.01	220.0	8.0	893.0
22:00	8.3	100.0	0.00	220.0	7.7	892.8
22:10	8.3	100.0	0.00	220.0	8.0	892.7
22:20	8.3	100.0	0.00	220.0	7.3	892.7
22:30	8.3	100.0	0.00	220.0	6.9	892.6
22:40	8.3	100.0	0.00	220.0	7.0	892.6
22:50	8.3	100.0	0.00	210.0	7.8	892.7
23:00	8.3	100.0	0.00	220.0	6.3	892.5
23:10	8.3	100.0	0.00	220.0	6.5	892.4
23:20	8.4	100.0	0.00	220.0	7.7	892.3
23:30	8.4	100.0	0.01	220.0	5.9	892.2
23:40	8.3	100.0	0.00	220.0	5.5	892.1
23:50	8.3	100.0	0.00	220.0	5.2	892.1

Table N2: Locally measured meteorological data at the summit station Schmücke on 22 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	8.3	100.0	0.00	220.0	5.0	892.0
0:10	8.2	100.0	0.00	220.0	4.9	892.0
0:20	8.3	100.0	0.00	220.0	4.8	891.8
0:30	8.4	100.0	0.00	220.0	4.7	891.8
0:40	8.3	100.0	0.00	210.0	4.9	891.8
0:50	8.4	100.0	0.00	210.0	4.9	891.6
1:00	8.3	100.0	0.00	210.0	4.4	891.6
1:10	8.3	100.0	0.02	210.0	5.6	891.6
1:20	8.3	100.0	0.36	210.0	6.2	891.6
1:30	8.2	100.0	0.22	210.0	5.3	891.3
1:40	8.3	100.0	0.22	210.0	5.4	891.4
1:50	8.1	100.0	0.42	200.0	4.9	891.3
2:00	7.8	100.0	0.09	180.0	4.4	891.1
2:10	8.1	100.0	0.14	190.0	4.6	890.9
2:20	7.8	100.0	0.18	180.0	4.9	890.9
2:30	7.6	100.0	0.22	180.0	5.6	890.9
2:40	7.4	100.0	0.11	180.0	6.3	890.8
2:50	7.6	100.0	0.11	190.0	5.7	890.6
3:00	7.9	100.0	0.14	200.0	8.5	890.6
3:10	7.8	100.0	0.16	200.0	8.4	890.5
3:20	7.6	100.0	0.13	210.0	8.7	890.4
3:30	7.6	100.0	0.15	210.0	9.4	890.3
3:40	7.7	100.0	0.21	210.0	9.6	890.2
3:50	7.8	100.0	0.10	210.0	9.7	890.1
4:00	8.0	100.0	0.14	210.0	8.8	890.1
4:10	8.1	100.0	0.12	220.0	8.0	889.9
4:20	8.0	100.0	0.10	220.0	7.7	889.8
4:30	8.0	100.0	0.19	220.0	7.0	889.7
4:40	8.1	100.0	0.16	220.0	7.1	889.7
4:50	7.9	100.0	0.20	210.0	6.8	889.7
5:00	7.8	100.0	0.10	210.0	7.6	889.7
5:10	7.6	100.0	0.10	210.0	6.9	889.6
5:20	7.6	100.0	0.13	210.0	6.4	889.6
5:30	7.6	100.0	0.21	210.0	6.3	889.6
5:40	7.6	100.0	0.20	210.0	7.1	889.7
5:50	7.6	100.0	0.17	210.0	7.4	889.8
6:00	7.7	100.0	0.11	210.0	7.5	889.9
6:10	7.7	100.0	0.25	210.0	7.9	889.8
6:20	7.7	100.0	0.10	210.0	6.9	889.8
6:30	7.8	100.0	0.07	220.0	6.1	889.8
6:40	7.9	100.0	0.03	220.0	6.2	889.9
6:50	8.0	100.0	0.06	220.0	7.2	890.0
7:00	8.1	100.0	0.12	220.0	6.8	890.1
7:10	8.1	100.0	0.28	220.0	5.7	890.1
7:20	8.2	100.0	0.21	220.0	5.2	890.0
7:30	8.2	100.0	0.17	220.0	6.3	889.9
7:40	8.2	100.0	0.32	220.0	5.9	890.0
7:50	8.3	100.0	0.14	220.0	6.3	890.0

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
8:00	8.3	100.0	0.09	220.0	6.7	890.1
8:10	8.3	100.0	0.10	210.0	7.1	890.2
8:20	8.3	100.0	0.11	220.0	6.1	890.2
8:30	8.3	100.0	0.25	220.0	6.6	890.3
8:40	8.4	100.0	0.37	220.0	6.3	890.3
8:50	8.4	100.0	0.51	220.0	6.7	890.3
9:00	8.3	100.0	0.49	210.0	6.8	890.4
9:10	8.3	100.0	0.49	220.0	7.1	890.4
9:20	8.3	100.0	0.25	220.0	6.3	890.5
9:30	8.3	100.0	0.34	220.0	5.5	890.5
9:40	8.4	100.0	0.17	220.0	5.4	890.5
9:50	8.4	100.0	0.14	220.0	5.7	890.5
10:00	8.4	100.0	0.10	220.0	5.6	890.5
10:10	8.4	100.0	0.14	220.0	5.6	890.6
10:20	8.4	100.0	0.40	220.0	5.6	890.7
10:30	8.5	100.0	0.05	230.0	5.4	890.7
10:40	8.4	100.0	0.02	240.0	5.3	890.7
10:50	8.4	100.0	0.01	240.0	6.3	890.6
11:00	8.4	100.0	0.02	240.0	5.8	890.7
11:10	8.4	100.0	0.00	230.0	5.8	890.6
11:20	8.4	100.0	0.00	230.0	5.5	890.7
11:30	8.4	100.0	0.00	230.0	6.0	890.7
11:40	8.5	100.0	0.01	240.0	5.6	890.7
11:50	8.5	100.0	0.01	240.0	5.4	890.7
12:00	8.5	100.0	0.01	250.0	6.2	890.7
12:10	8.6	100.0	0.00	230.0	5.9	890.7
12:20	8.5	100.0	0.00	240.0	6.3	890.7
12:30	8.5	100.0	0.00	240.0	6.3	890.6
12:40	8.6	100.0	0.00	230.0	5.5	890.5
12:50	8.7	100.0	0.00	230.0	6.0	890.6
13:00	8.7	100.0	0.00	220.0	6.7	890.4
13:10	8.7	100.0	0.00	220.0	7.5	890.5
13:20	8.7	100.0	0.00	220.0	7.5	890.4
13:30	8.7	100.0	0.01	210.0	8.7	890.5
13:40	8.7	100.0	0.00	210.0	8.6	890.4
13:50	8.7	100.0	0.00	210.0	8.4	890.4
14:00	8.6	100.0	0.00	210.0	7.9	890.3
14:10	8.5	100.0	0.00	210.0	6.8	890.2
14:20	8.6	100.0	0.00	210.0	6.8	890.0
14:30	8.7	100.0	0.00	220.0	7.1	890.0
14:40	8.7	100.0	0.00	220.0	7.2	890.0
14:50	8.7	100.0	0.00	210.0	8.3	889.9
15:00	8.8	100.0	0.01	210.0	8.6	889.9
15:10	8.9	100.0	0.02	210.0	9.6	889.7
15:20	8.9	100.0	0.01	210.0	9.8	889.7
15:30	8.9	100.0	0.00	210.0	9.6	889.8
15:40	8.9	100.0	0.03	200.0	8.6	889.7
15:50	8.9	100.0	0.03	200.0	7.6	889.7
16:00	9.0	100.0	0.01	200.0	8.8	889.6
16:10	8.9	100.0	0.00	210.0	8.7	889.6
16:20	9.0	100.0	0.05	200.0	9.0	889.6
16:30	9.0	100.0	0.06	210.0	8.8	889.6
16:40	9.0	100.0	0.04	210.0	8.9	889.5
16:50	9.0	100.0	0.02	210.0	10.2	889.5
17:00	9.1	100.0	0.01	210.0	10.4	889.3
17:10	9.1	100.0	0.01	210.0	10.6	889.4
17:20	9.0	100.0	0.00	200.0	9.5	889.4
17:30	9.0	100.0	0.00	200.0	9.8	889.5
17:40	8.9	100.0	0.01	200.0	9.3	889.5
17:50	8.9	100.0	0.00	200.0	9.6	889.4
18:00	8.8	100.0	0.00	210.0	9.7	889.3
18:10	8.7	100.0	0.00	210.0	9.8	889.3
18:20	8.7	100.0	0.00	210.0	10.5	889.2
18:30	8.6	100.0	0.00	200.0	9.5	889.1
18:40	8.6	100.0	0.00	200.0	9.0	889.1
18:50	8.5	100.0	0.00	200.0	9.8	889.0
19:00	8.5	100.0	0.00	200.0	10.1	888.9
19:10	8.5	100.0	0.00	210.0	10.1	888.9
19:20	8.5	100.0	0.00	210.0	10.0	888.8
19:30	8.4	100.0	0.00	200.0	8.9	888.8
19:40	8.4	100.0	0.00	210.0	9.3	888.7
19:50	8.4	100.0	0.00	210.0	9.3	888.6
20:00	8.4	100.0	0.00	210.0	9.1	888.6
20:10	8.3	100.0	0.00	210.0	10.4	888.6
20:20	8.3	100.0	0.00	210.0	10.1	888.4
20:30	8.3	100.0	0.00	200.0	10.4	888.4
20:40	8.2	100.0	0.00	200.0	10.3	888.3
20:50	8.2	100.0	0.00	210.0	11.3	888.1
21:00	8.2	100.0	0.00	210.0	11.3	888.1
21:10	8.1	100.0	0.00	210.0	11.6	888.0
21:20	8.1	100.0	0.00	210.0	12.5	887.9
21:30	8.0	100.0	0.00	210.0	12.6	887.8
21:40	8.0	100.0	0.00	210.0	12.2	887.6
21:50	8.0	100.0	0.00	200.0	11.4	887.4
22:00	7.9	100.0	0.00	210.0	12.0	887.4
22:10	7.9	100.0	0.00	210.0	13.4	887.3
22:20	7.9	100.0	0.06	210.0	14.7	887.3
22:30	7.8	100.0	0.27	210.0	12.8	887.2
22:40	7.8	100.0	0.40	210.0	11.7	887.1
22:50	7.8	100.0	0.23	200.0	10.6	886.8
23:00	7.8	100.0	0.07	200.0	10.6	886.6
23:10	7.8	100.0	0.02	200.0	11.1	886.3
23:20	7.8	100.0	0.03	200.0	12.2	886.2
23:30	7.8	100.0	0.04	200.0	12.1	886.1
23:40	7.8	100.0	0.05	200.0	11.9	886.0
23:50	7.7	100.0	0.06	200.0	12.8	885.7

Table N3: Locally measured meteorological data at the summit station Schmücke on 23 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	7.7	100.0	0.03	200.0	12.3	885.6
0:10	7.7	100.0	0.01	200.0	13.3	885.6
0:20	7.6	100.0	0.01	200.0	13.5	885.5
0:30	7.6	100.0	0.00	200.0	13.0	885.1
0:40	7.6	100.0	0.00	200.0	13.5	884.8
0:50	7.6	100.0	0.00	200.0	15.6	884.6
1:00	7.6	100.0	0.00	210.0	16.0	884.5
1:10	7.7	100.0	0.06	210.0	16.7	884.4
1:20	7.6	100.0	0.03	210.0	17.0	884.3
1:30	7.6	100.0	0.03	210.0	15.9	884.2
1:40	7.7	100.0	0.14	210.0	16.8	884.3
1:50	7.7	100.0	0.32	210.0	16.1	884.5
2:00	7.7	100.0	0.23	210.0	15.3	884.4
2:10	7.8	100.0	0.23	200.0	15.5	884.4
2:20	7.8	100.0	0.14	200.0	16.0	884.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
2:30	7.9	100.0	0.10	210.0	17.3	884.0
2:40	8.0	100.0	0.10	210.0	18.8	884.0
2:50	8.0	100.0	0.10	210.0	18.7	883.9
3:00	8.0	100.0	0.10	210.0	19.0	883.8
3:10	8.1	100.0	0.10	210.0	19.6	883.7
3:20	8.1	100.0	0.09	210.0	19.0	883.5
3:30	8.1	100.0	0.41	210.0	18.6	883.5
3:40	8.1	100.0	0.21	210.0	18.0	883.6
3:50	8.1	100.0	0.10	220.0	15.4	883.9
4:00	8.2	100.0	0.08	220.0	14.6	884.3
4:10	8.2	100.0	0.10	220.0	14.3	884.6
4:20	8.2	100.0	0.06	220.0	13.7	884.7
4:30	8.2	100.0	0.10	220.0	13.4	884.9
4:40	8.2	100.0	0.08	210.0	15.0	885.0
4:50	8.2	100.0	0.19	210.0	14.6	885.0
5:00	8.3	100.0	0.12	210.0	14.5	885.2
5:10	8.3	100.0	0.09	220.0	12.8	885.4
5:20	8.3	100.0	0.21	220.0	12.7	885.5
5:30	8.3	100.0	0.34	220.0	12.6	885.6
5:40	8.2	100.0	0.09	220.0	13.8	885.6
5:50	8.2	100.0	0.03	210.0	14.5	885.8
6:00	8.2	100.0	0.14	220.0	14.2	885.9
6:10	8.1	100.0	0.08	210.0	14.2	885.9
6:20	8.1	100.0	0.06	210.0	14.3	886.2
6:30	8.0	100.0	0.02	220.0	13.2	886.5
6:40	8.1	100.0	0.01	220.0	11.4	886.7
6:50	8.0	100.0	0.01	220.0	12.3	886.7
7:00	8.0	100.0	0.00	220.0	12.8	886.7
7:10	8.0	100.0	0.00	210.0	13.9	886.8
7:20	8.0	100.0	0.00	210.0	13.1	886.9
7:30	8.1	100.0	0.05	210.0	13.3	887.0
7:40	8.1	100.0	0.12	210.0	13.1	887.2
7:50	8.1	100.0	0.18	220.0	13.3	887.2
8:00	8.1	100.0	0.09	220.0	12.1	887.4
8:10	8.1	100.0	0.19	210.0	13.0	887.5
8:20	8.1	100.0	0.12	210.0	12.0	887.5
8:30	8.1	100.0	0.08	210.0	12.3	887.7
8:40	8.0	100.0	0.04	210.0	13.4	887.6
8:50	7.9	100.0	0.15	210.0	13.8	887.5
9:00	7.9	100.0	0.04	210.0	13.1	887.6
9:10	7.9	100.0	0.05	220.0	12.5	887.7
9:20	7.8	100.0	0.24	220.0	13.0	887.7
9:30	7.8	100.0	0.08	220.0	13.2	887.7
9:40	7.8	100.0	0.09	220.0	12.8	887.9
9:50	7.8	100.0	0.12	210.0	13.2	888.0
10:00	7.7	100.0	0.12	210.0	13.9	888.1
10:10	7.6	100.0	0.13	220.0	13.6	888.3
10:20	7.5	100.0	0.02	210.0	13.5	888.5
10:30	7.4	100.0	0.01	210.0	12.6	888.6
10:40	7.3	100.0	0.16	220.0	13.2	888.6
10:50	7.3	100.0	0.28	220.0	13.1	888.8
11:00	7.2	100.0	0.45	220.0	12.3	888.9
11:10	7.1	100.0	0.43	220.0	11.8	889.2
11:20	6.9	100.0	0.15	220.0	9.8	889.4
11:30	6.7	100.0	0.20	220.0	10.2	889.4
11:40	6.7	100.0	0.11	230.0	9.3	889.6
11:50	6.5	100.0	0.11	220.0	8.5	889.7
12:00	6.4	100.0	0.04	220.0	9.4	889.7
12:10	6.3	100.0	0.08	220.0	9.5	889.7
12:20	6.3	100.0	0.02	220.0	9.8	889.6
12:30	6.2	100.0	0.01	220.0	9.6	889.7
12:40	6.1	100.0	0.03	220.0	9.8	889.8
12:50	6.1	100.0	0.06	220.0	8.6	890.0
13:00	6.1	100.0	0.02	220.0	9.2	890.1
13:10	6.0	100.0	0.01	220.0	9.7	890.2
13:20	5.9	100.0	0.00	230.0	8.9	890.4
13:30	5.8	100.0	0.00	230.0	7.7	890.6
13:40	5.8	100.0	0.00	230.0	7.3	890.7
13:50	5.5	100.0	0.39	240.0	8.4	891.2
14:00	4.7	100.0	0.08	260.0	9.9	891.4
14:10	4.4	100.0	0.08	250.0	9.2	891.4
14:20	4.3	99.0	0.03	250.0	9.1	891.7
14:30	4.2	100.0	0.02	250.0	9.5	891.8
14:40	4.2	100.0	0.01	250.0	7.8	891.9
14:50	4.2	99.0	0.00	240.0	7.5	892.1
15:00	4.2	100.0	0.00	240.0	7.9	892.3
15:10	4.2	99.0	0.00	240.0	8.0	892.3
15:20	4.2	99.0	0.00	240.0	7.4	892.6
15:30	4.3	99.0	0.00	240.0	6.1	892.7
15:40	4.2	99.0	0.00	240.0	7.9	892.7
15:50	4.2	99.0	0.00	240.0	7.5	892.9
16:00	4.1	99.0	0.00	240.0	7.1	893.1
16:10	4.0	100.0	0.00	240.0	7.1	893.2
16:20	3.9	100.0	0.00	250.0	7.1	893.6
16:30	3.6	100.0	0.02	260.0	7.4	893.9
16:40	3.6	100.0	0.01	260.0	6.3	894.2
16:50	3.3	100.0	0.00	250.0	6.2	894.4
17:00	3.3	100.0	0.00	250.0	4.5	894.8
17:10	3.2	100.0	0.00	240.0	4.0	894.9
17:20	3.0	100.0	0.00	240.0	4.5	895.2
17:30	3.0	100.0	0.00	240.0	4.4	895.3
17:40	2.9	100.0	0.00	250.0	4.9	895.5
17:50	2.8	100.0	0.00	250.0	4.6	895.7
18:00	2.8	100.0	0.00	250.0	4.3	895.8
18:10	2.8	100.0	0.00	250.0	3.9	895.9
18:20	2.7	100.0	0.00	250.0	4.4	896.2
18:30	2.7	100.0	0.00	260.0	4.2	896.3
18:40	2.6	100.0	0.00	250.0	4.2	896.5
18:50	2.6	100.0	0.00	250.0	5.3	896.6
19:00	2.6	100.0	0.00	250.0	4.9	896.7
19:10	2.5	100.0	0.00	250.0	5.6	896.7
19:20	2.5	100.0	0.00	250.0	4.5	896.7
19:30	2.5	100.0	0.00	250.0	3.8	896.8
19:40	2.4	100.0	0.00	250.0	3.8	896.9
19:50	2.5	100.0	0.00	240.0	4.2	897.0
20:00	2.6	100.0	0.00	240.0	4.0	897.1
20:10	2.5	100.0	0.00	250.0	4.7	897.2
20:20	2.4	100.0	0.00	250.0	5.9	897.3
20:30	2.4	100.0	0.05	250.0	5.7	897.5
20:40	2.3	100.0	0.03	250.0	5.4	897.6
20:50	2.1	100.0	0.01	240.0	4.7	897.7
21:00	2.0	100.0	0.01	240.0	4.0	897.8
21:10	2.0	100.0	0.00	230.0	4.2	897.9
21:20	1.9	100.0	0.00	230.0	4.8	898.0
21:30	1.9	100.0	0.00	230.0	5.8	898.0
21:40	1.9	100.0	0.00	230.0	5.5	898.0
21:50	1.9	100.0	0.00	230.0	5.7	898.2
22:00	1.9	100.0	0.00	240.0	5.4	898.2

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
22:10	1.8	100.0	0.00	230.0	5.3	898.3
22:20	1.7	100.0	0.00	230.0	5.3	898.3
22:30	1.7	100.0	0.00	230.0	5.1	898.3
22:40	1.7	100.0	0.00	230.0	6.5	898.5
22:50	1.7	100.0	0.00	230.0	6.2	898.6
23:00	1.7	100.0	0.00	230.0	6.6	898.7
23:10	1.6	100.0	0.00	230.0	5.3	898.9
23:20	1.6	100.0	0.00	230.0	6.4	899.0
23:30	1.6	100.0	0.00	230.0	4.7	899.2
23:40	1.6	100.0	0.00	230.0	5.8	899.2
23:50	1.5	100.0	0.00	220.0	6.2	899.3

Table N4: Locally measured meteorological data at the summit station Schmücke on 24 October 2002 (source: DWD)

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
0:00	1.4	100.0	0.00	230.0	6.4	899.3
0:10	1.4	100.0	0.00	230.0	5.5	899.4
0:20	1.3	100.0	0.00	220.0	6.0	899.4
0:30	1.3	100.0	0.00	220.0	6.0	899.4
0:40	1.2	100.0	0.00	220.0	5.8	899.6
0:50	1.2	100.0	0.00	220.0	6.4	899.6
1:00	1.1	100.0	0.00	220.0	6.2	899.6
1:10	1.1	100.0	0.00	220.0	6.6	899.5
1:20	1.1	100.0	0.00	220.0	6.1	899.5
1:30	1.0	100.0	0.00	220.0	5.8	899.5
1:40	1.0	100.0	0.00	220.0	6.4	899.5
1:50	1.0	100.0	0.00	220.0	6.3	899.5
2:00	1.0	100.0	0.00	210.0	7.1	899.5
2:10	1.0	100.0	0.00	220.0	7.6	899.4
2:20	0.9	100.0	0.00	220.0	6.7	899.3
2:30	0.9	100.0	0.00	220.0	6.8	899.4
2:40	0.9	100.0	0.00	220.0	7.4	899.4
2:50	0.9	100.0	0.00	220.0	7.3	899.4
3:00	0.9	100.0	0.00	220.0	7.0	899.3
3:10	0.9	100.0	0.00	220.0	8.2	899.3
3:20	0.9	100.0	0.00	220.0	8.1	899.3
3:30	0.9	100.0	0.00	220.0	8.1	899.3
3:40	0.9	100.0	0.00	220.0	8.9	899.2
3:50	0.9	100.0	0.00	220.0	9.0	899.1
4:00	0.9	100.0	0.00	220.0	8.7	899.1
4:10	0.9	100.0	0.00	220.0	8.2	898.9
4:20	1.1	100.0	0.00	220.0	8.0	898.9
4:30	1.1	100.0	0.02	220.0	8.5	898.9
4:40	1.0	100.0	0.07	220.0	8.9	899.1
4:50	0.5	99.0	0.45	220.0	8.3	899.2
5:00	0.4	99.0	0.40	250.0	5.9	899.3
5:10	0.3	100.0	0.54	250.0	6.8	899.4
5:20	0.5	99.0	0.11	230.0	6.2	899.4
5:30	0.6	99.0	0.02	230.0	6.5	899.5
5:40	0.7	99.0	0.00	220.0	6.4	899.5
5:50	0.8	100.0	0.01	230.0	6.9	899.7
6:00	0.8	100.0	0.00	230.0	6.5	899.9
6:10	0.7	99.0	0.00	240.0	5.9	900.0
6:20	0.7	99.0	0.00	230.0	5.4	900.0
6:30	0.7	99.0	0.00	230.0	6.3	900.2
6:40	0.7	99.0	0.00	230.0	6.2	900.2
6:50	0.6	99.0	0.00	250.0	5.9	900.4
7:00	0.5	99.0	0.00	250.0	5.6	900.4
7:10	0.4	99.0	0.00	250.0	6.9	900.7
7:20	0.4	99.0	0.00	250.0	5.8	900.9
7:30	0.5	99.0	0.00	250.0	5.7	900.9
7:40	0.5	99.0	0.00	250.0	5.0	901.0
7:50	0.4	99.0	0.00	250.0	7.3	901.0
8:00	0.4	99.0	0.00	250.0	7.2	901.2
8:10	0.5	99.0	0.00	240.0	6.5	901.2
8:20	0.6	99.0	0.00	240.0	6.1	901.3
8:30	0.6	99.0	0.00	240.0	6.5	901.3
8:40	0.7	99.0	0.00	240.0	5.7	901.5
8:50	0.8	100.0	0.00	240.0	5.4	901.6
9:00	0.9	100.0	0.00	240.0	5.3	901.6
9:10	0.9	100.0	0.00	240.0	5.6	901.7
9:20	1.1	100.0	0.00	240.0	5.7	901.9
9:30	1.1	100.0	0.00	240.0	5.2	901.9
9:40	1.3	100.0	0.00	230.0	5.3	902.0
9:50	1.5	100.0	0.00	240.0	6.9	902.0
10:00	1.5	100.0	0.00	240.0	6.6	902.2
10:10	1.4	100.0	0.00	240.0	6.3	902.4
10:20	1.5	100.0	0.00	230.0	5.7	902.4
10:30	1.7	100.0	0.00	230.0	5.5	902.4
10:40	2.2	100.0	0.00	240.0	6.3	902.4
10:50	2.4	100.0	0.00	240.0	6.4	902.3
11:00	2.1	100.0	0.00	230.0	6.1	902.4
11:10	2.2	100.0	0.00	240.0	5.3	902.5
11:20	2.7	100.0	0.00	230.0	5.8	902.3
11:30	2.7	100.0	0.00	230.0	7.4	902.3
11:40	2.7	100.0	0.00	230.0	7.1	902.4
11:50	2.8	100.0	0.00	220.0	7.0	902.4
12:00	2.0	100.0	0.00	230.0	7.0	902.5
12:10	1.8	100.0	0.00	240.0	5.1	902.6
12:20	1.6	100.0	0.00	240.0	5.5	902.6
12:30	1.3	99.0	0.00	240.0	5.3	902.6
12:40	1.3	99.0	0.00	240.0	5.1	902.7
12:50	1.5	99.0	0.00	240.0	5.1	902.8
13:00	1.7	97.0	0.00	250.0	5.6	902.9
13:10	2.0	97.0	0.00	240.0	4.3	902.9
13:20	2.7	91.0	0.00	220.0	6.7	902.8
13:30	2.6	94.0	0.00	240.0	5.6	902.9
13:40	2.5	97.0	0.00	260.0	5.0	902.9
13:50	2.6	97.0	0.00	250.0	4.1	903.1
14:00	2.4	94.0	0.00	230.0	4.2	903.1
14:10	2.2	97.0	0.00	240.0	4.8	903.2
14:20	2.8	95.0	0.00	240.0	4.6	903.3
14:30	2.7	93.0	0.00	230.0	5.1	903.2
14:40	2.7	94.0	0.00	240.0	4.6	903.2
14:50	2.3	94.0	0.00	240.0	4.8	903.1
15:00	2.2	95.0	0.00	240.0	4.6	903.2
15:10	2.7	93.0	0.00	240.0	5.1	903.2
15:20	2.4	90.0	0.00	230.0	4.3	903.2
15:30	2.3	86.0	0.00	220.0	6.0	903.1
15:40	2.2	86.0	0.00	220.0	5.7	903.1
15:50	2.1	88.0	0.00	220.0	5.4	903.1
16:00	1.9	91.0	0.00	220.0	5.1	903.0
16:10	1.7	94.0	0.00	220.0	5.1	903.0
16:20	1.5	94.0	0.00	220.0	4.7	903.0
16:30	1.5	94.0	0.00	220.0	5.1	903.0

Time [UTC]	Temperature [°C]	Relative Humidity [%]	Precipitation [mm]	Wind direction [°]	Wind speed [m s ⁻¹]	Air pressure [hPa]
16:40	1.6	96.0	0.00	220.0	4.6	903.1
16:50	1.6	97.0	0.00	210.0	5.0	903.1
17:00	1.4	99.0	0.00	220.0	6.3	903.2
17:10	1.3	99.0	0.00	220.0	5.8	903.1
17:20	1.4	99.0	0.00	220.0	5.4	903.2
17:30	1.4	99.0	0.00	220.0	5.7	903.2
17:40	1.3	99.0	0.00	220.0	6.0	903.2
17:50	1.2	100.0	0.00	220.0	5.5	903.3
18:00	1.2	100.0	0.00	210.0	5.6	903.4
18:10	1.3	100.0	0.00	210.0	5.3	903.4
18:20	1.4	100.0	0.00	210.0	5.0	903.4
18:30	1.3	100.0	0.00	220.0	4.9	903.4
18:40	1.2	100.0	0.00	210.0	4.1	903.3
18:50	1.1	100.0	0.00	220.0	3.4	903.3
19:00	1.1	100.0	0.00	220.0	3.2	903.3
19:10	1.2	100.0	0.00	210.0	3.6	903.3
19:20	1.1	100.0	0.00	210.0	3.4	903.2
19:30	1.1	100.0	0.00	210.0	4.1	903.2
19:40	1.4	100.0	0.00	210.0	4.5	903.2
19:50	1.5	100.0	0.00	210.0	5.1	903.2
20:00	1.5	100.0	0.00	210.0	5.2	903.2
20:10	1.6	100.0	0.00	210.0	5.0	903.2
20:20	1.6	100.0	0.00	210.0	5.2	903.0
20:30	1.6	100.0	0.00	210.0	5.8	902.8
20:40	1.6	100.0	0.00	210.0	5.8	902.8
20:50	1.6	100.0	0.00	210.0	6.0	902.9
21:00	1.6	100.0	0.00	220.0	6.2	902.8
21:10	1.6	100.0	0.00	220.0	6.1	902.6
21:20	1.7	100.0	0.00	220.0	6.1	902.5
21:30	1.7	100.0	0.00	220.0	6.6	902.6
21:40	1.7	100.0	0.00	220.0	6.9	902.4
21:50	1.8	100.0	0.00	220.0	6.3	902.5
22:00	1.9	100.0	0.00	210.0	6.6	902.5
22:10	1.8	100.0	0.00	210.0	5.3	902.4
22:20	1.7	100.0	0.00	200.0	4.4	902.4
22:30	1.7	100.0	0.00	200.0	4.4	902.4
22:40	1.6	100.0	0.00	190.0	3.7	902.4
22:50	1.5	100.0	0.00	180.0	4.5	902.4
23:00	1.4	100.0	0.00	180.0	4.5	902.3
23:10	1.5	100.0	0.00	180.0	5.3	902.2
23:20	1.5	100.0	0.00	190.0	5.7	901.9
23:30	1.6	100.0	0.00	190.0	5.8	901.8
23:40	1.7	100.0	0.00	190.0	6.0	901.6
23:50	1.8	100.0	0.00	190.0	6.9	901.5