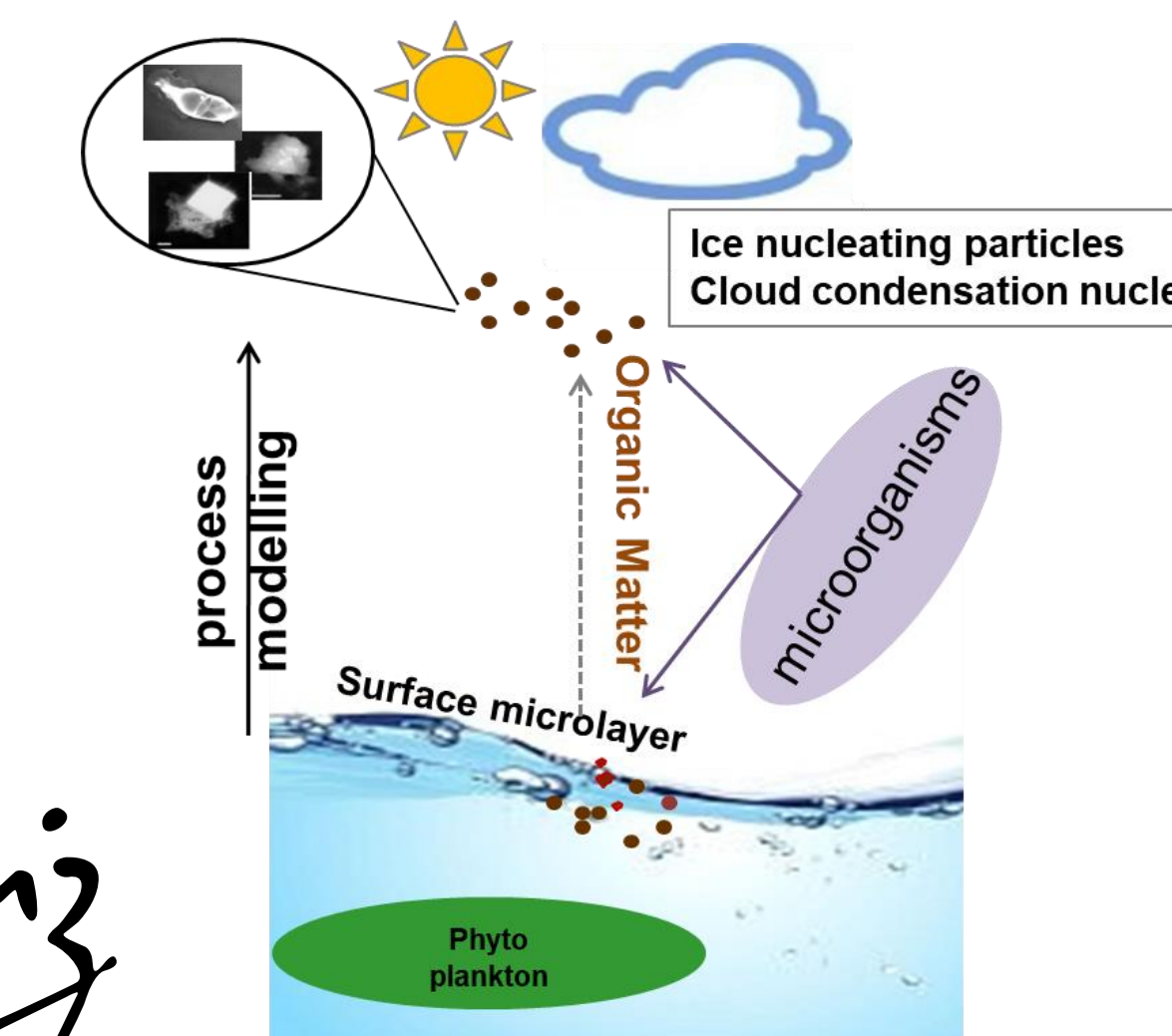


# Ocean-atmosphere interactions at the CVAO: MarParCloud

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## Introduction

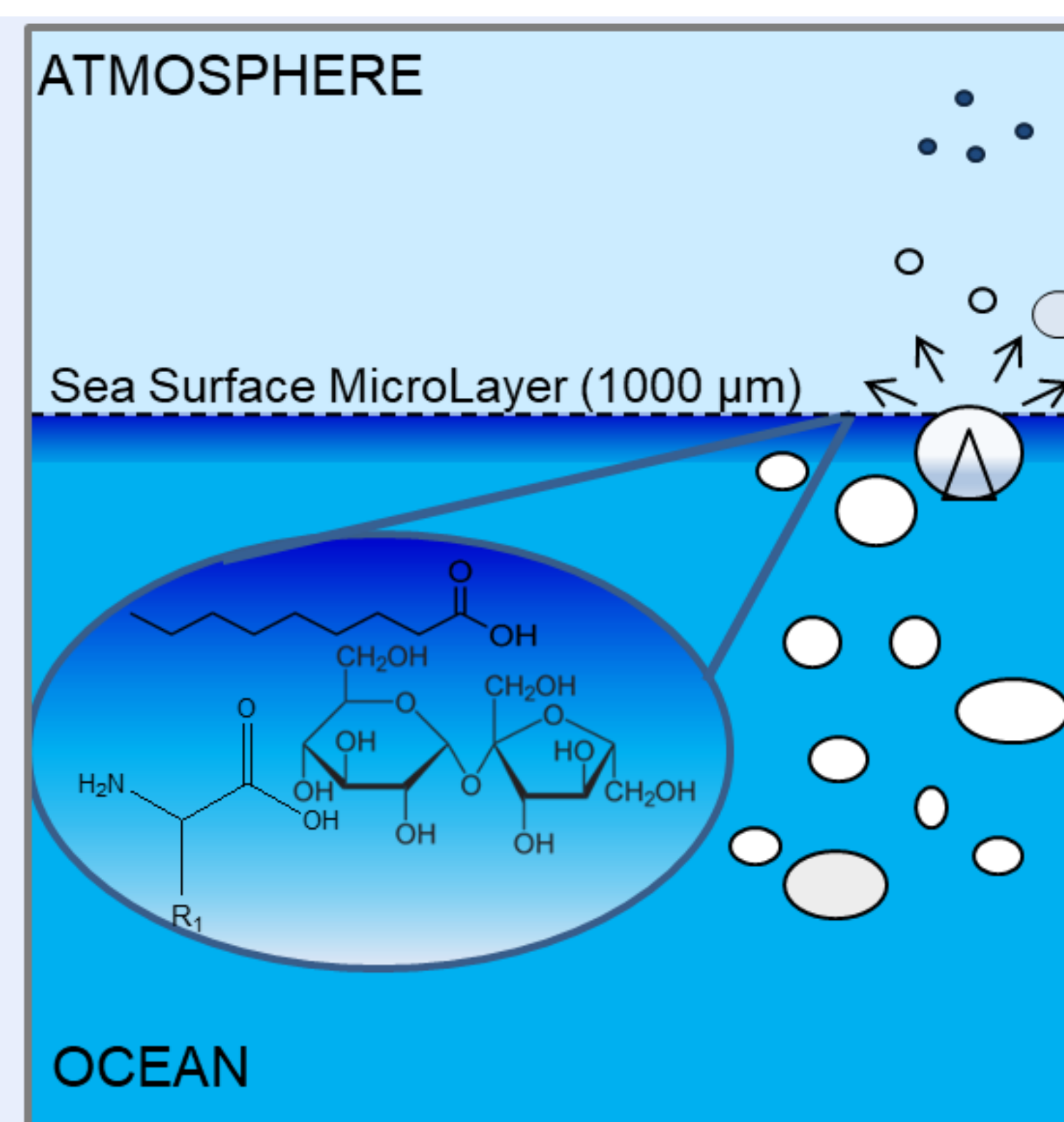
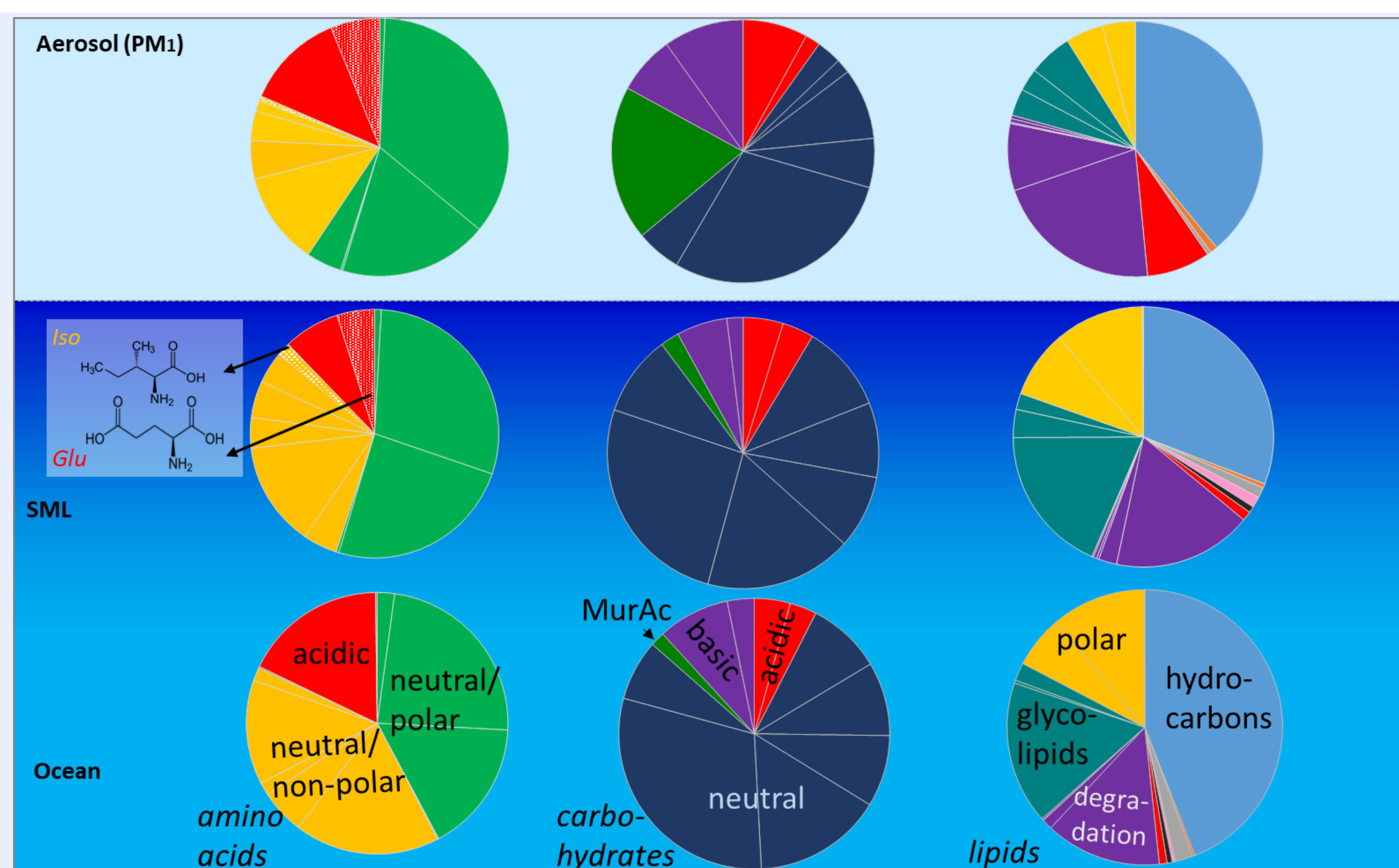
The ocean covers around 71% of the Earth's surface and acts as a source and sink for atmospheric gases and particles. However, the complex interactions between the marine boundary layer (MBL) and the ocean surface are still poorly understood. The formation of ocean-derived aerosol particles and their precursors is influenced by the uppermost layer of the ocean, the sea surface microlayer (SML) which forms due to different physicochemical properties of air and water. The atmospheric marine particles contain sea salt and organic matter (OM) that is to date largely unexplored, but important for aerosol formation and properties.

The project MarParCloud (Marine biological production, organic aerosol Particles and marine Clouds: a process chain) aims at improving our understanding of the genesis, modification and impact of marine OM, from its biological production in the ocean, via its export to marine aerosol particles and, finally, towards its ability to act as cloud-forming particles. An international and interdisciplinary research team was working together on the MarParCloud field campaign in autumn 2017 at the CVAO by taking aerosol particles, seawater and cloud water samples for chemical, physical and biological studies.

## MarParCloud field campaign at CVAO



## Main findings



- Ocean-derived compounds are present in the aerosol particles at mountain height and in the cloud water.
- Pronounced transfer of organic particles to the atmosphere.
- An evident coupling between ocean and atmosphere was observed.

## References

The results of the MarParcloud project led to numerous peer-reviewed publications that are compiled in a Special Issue at the scientific journal Atmospheric Chemistry and Physics:



## Acknowledgement

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Different groups of organic matter components and their composition in the ocean and in the atmosphere (left) with a schematic of their transfer from the ocean (right).