

Aerosol Measurements at Cape Verde

Konrad Müller , Alfred Wiedensohler and Hartmut Herrmann
Leibniz-Institut für Troposphärenforschung, Permoserstr. 15, 04318 Leipzig, Germany

The investigation of aerosol transport and deposition from the African continent to the island Sao Vicente will be focussed on the determination of total iron and iron species, mainly. Iron is an essential micronutrient for marine micro-organisms. The main source of iron in the open tropic Atlantic Ocean is the deposition of Saharan dust. The physical and chemical characterization of the aerosol will be investigated by online size and number distribution (SMPS and APS) as well as by routine collection of PM₁₀ by a high volume sampler and size segregated collection using five stage BERNER impactor during intensive measurement periods. Using spectroscopic methods the different iron minerals will be identified and a distinction between Fe(II) and Fe(III) will be carried out by ion chromatography. Trace metal analyses from impactor samples will be carried out by PIXE.

Besides the iron speciation also the chemical composition of PM will be investigated to identify further sources like forest fires and anthropogenic emissions. Complexing agents for iron, such as dicarboxylic acids, might be formed from additional sources. Hence, a variety of organic compounds will also be determined. Classes of compounds include dicarboxylic acids, alkanes, PAHs, biomass burning tracers and others which will be identified by either GC/MS or LC/MS.