



Long-term Studies of Marine Halogen Release

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Long term measurements of atmospheric trace gases using multi-axis DOAS instruments are pursued at the new SOLAS observatory on the island of São Vicente, (Cape Verde). This research is part of the SOPRAN (Surface Ocean Processes in the Anthropocene) project (Fördernummer:03F0462F). Reactive halogen species (RHS) such as bromine- and iodine- containing species play major roles in the chemistry of ozone in both the troposphere and lower stratosphere and thus possibly influence the ozone budget on a global scale. In addition iodine-species emitted from the ocean surface have been shown to be responsible for the production of new atmospheric particles in the marine boundary layer. This may have an effect on cloud formation and radiation transfer on local and global scales. Long term measurements of RHS abundances will help to identify their key regions and processes for formation. A new long term Multi-MAX-DOAS instrument has been installed at the SOLAS observatory on the island of São Vicente, (Cape Verde). The main focus of these unique measurements is the investigation of reactive halogen chemistry in the subtropical marine boundary layer based on measurements of BrO, IO, and possibly OIO. Because of its wide spectral range also the use for O₄-retrievals to gain aerosol profiles is possible. IO has been detected with mixing ratios up to 1.3 ppt. For BrO an upper limit of 2 ppt could be determined.