



First results from the SHIVA SONNE expedition to the tropical Western Pacific during November 2011

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The tropical oceans are a known source of reactive bromine and iodine to the atmosphere in the form of short-lived brominated and iodinated methanes as e.g. bromoform (CHBr_3) and methyl iodide (CH_3I). These very short lived substances (VSLS) are expected to reach the stratosphere and deplete stratospheric ozone in the tropics especially if they have strong emissions over the tropical oceans, where high convective activity with fast efficient uplifts exists. Thus, the tropical Western Pacific is of special interest since the oceanic VSLS are largely uncharacterized and are projected to have hot spots for both their emissions and fast transport pathways to the stratosphere throughout the year.

In this study, we present first results from the SHIVA Sonne expedition to the tropical Western Pacific during November 2011. The ship cruise was embedded within the frame work of the EU-project SHIVA (Stratospheric ozone: Halogen Impacts in a Varying Atmosphere). To investigate the large variability of VSLS sources in more detail the expedition cruised through Malaysian and Philippine coastal and open waters of various biogeochemical regimes. The ship expedition will be introduced to the audience, presenting the atmospheric and hydrographic setting. We will show highlights from the cruise including frequent meteorological profile soundings, characterizing the atmosphere from the marine boundary layer to the stratosphere in more detail, together with VSLS measurements both from the atmosphere and the ocean. First estimates of the VSLS transport into the stratosphere will be presented.