



Effects of Improved Spatial Resolution in SCIAMACHY BrO measurements compared to GOME BrO Retrievals.

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In polar spring of every year, sudden enhancement of bromine monoxide (BrO) in the boundary layer is a well-known event that is caused by the autocatalytic release of BrO from sea salt aerosols and sea ice (or frost flowers). Here we present observations of polar BrO explosion events with measurements obtained using a DOAS algorithm on data from the SCIAMACHY (SCanning Imaging Absorption spectroMeter for Atmospheric CHartography) instrument on-board the ENVISAT platform, which has been in a near-polar and sun-synchronous orbit since the 1st of March 2002. Emphasis on the BrO retrievals in this study is placed on the effects of the improved spatial resolution of the SCIAMACHY footprints, typically $30 \times 60 \text{ km}^2$ (but up to $30 \times 30 \text{ km}^2$) over the relatively large footprints of the GOME measurements, typically ($320 \times 40 \text{ km}^2$). This improvement in resolution is used to get a more accurate estimate of the typical size of polar BrO explosion events and their evolution in time which in turn is relevant to test our current models of Bromine sources release mechanism in polar spring.