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Satellite remote sensing of So2 volcanic emission using GOME-2 and IASI data: sensitivity analysis.

E. Carboni, A. Dudhia, and R. Grainger
University of Oxford, AOPP - Physic, Oxford, United Kingdom (elisa@atm.ox.ac.uk)

GOME-2 and IASI (both on board of the METOP) have demonstrate to be able to quantify the So2 amount respectively in the UV and IR spectral region. In case of significant volcanic eruption IASI have enough information content to make possible the retrieval of the vertical profile of the So2 plume, especially when the plume is ejected above the boundary layer water vapour. GOME-2 can retrieve small So2 amount (<1DU) also in atmospheric layer close to the surface, like the case of volcanic degassing condition. In this work we intend to combine these two different spectral range in oder to have the maximum of information available for a So2 profile retreival. We present a sensitivity study using these 2 instruments combined with the optimal estimation (OE) analysis.
We consider different tropospheric and stratospheric scenario, with So2 loading from 1 to 100 DU, to understand what are the retrieval errors and improved the possibility to retrieve a vertical So2 profile.