

TROPOMI SO₂ retrievals: first results and initial validation

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The Sentinel-5 Precursor (S5P) platform was launched from Northern Russia on October 13, 2017 carrying the TROPOspheric Monitoring Instrument (TROPOMI). With a spatial resolution of 7x3.5 km², TROPOMI will provide important information on natural and anthropogenic emissions of trace gases and aerosols, with an unprecedented level of details.

BIRA-IASB and DLR have the joint responsibility of developing and maintaining the SO₂ retrieval algorithm and implementation into the S5P operational processor. In this presentation, we introduce the algorithm, show the first TROPOMI SO₂ results and discuss the lessons learnt during the commissioning phase. For several degassing volcanoes and anthropogenic sources, we illustrate the improved capability of TROPOMI to monitor global SO₂ emissions compared to the current OMI and GOME-2 sensors. Initial validation of the S5P SO₂ product with available correlative measurements will be shown. The retrieval challenges associated with higher resolution measurements are also addressed and plans for future work are presented.