



Evaluation of satellite sulphur dioxide estimates from OMI/Aura, SCIAMACHY/Envisat and GOME2/MetopA

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The EU FP7 Monitoring and Assessment of Regional air quality in China using space Observations, Project Of Long-term sino-european co-Operation, MarcoPolo, project focuses on deriving emission estimates from space and their refinement by spatial downscaling and by source sector apportionment. Satellite observations of sulphur dioxide, SO₂, over the greater China area are analyzed using novel techniques [Fioletov et al., 2011; 2013] in order to enhance the observational signal and provide a robust SO₂ dataset for the region. Observations from the SCIAMACHY/Envisat, GOME2/MetopA and OMI/Aura missions are assessed in this work and their relative strengths and shortcomings discussed at length. Rigorous screening is applied to and presented for each data source, including a full length spatiotemporal statistical analysis. Furthermore, identification of point sources such as power plants and urban agglomerations, as well as the definition of their relative contribution to the general SO₂ levels, form the basis of this investigation.