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Global distribution of SO2 derived from satellite born DOAS observations

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The GOME's (Global Ozone Monitoring Experiment, since 1995) Earthshine-spectra contain the absorption structures of many trace gases in the earth's atmosphere. To determine each of the absorbing atmospheric trace gases from the raw spectra, the DOAS (Differential Optical Absorption Spectroscopy) method is used. GOME SO2 observations are analysed for the period 1996 - 2002. The global maps show enhanced SO2 column densities reflecting various natural and anthropogenic sources like volcanoes, industry, heating, and biomass burning. From the spatial and temporal variation of the SO2 results the specific properties of the different sources is investigated and the emissions are quantified. Additional information on the source type is derived from the comparison to other trace gas maps which were also generated from the satellite observations.