

# Global observations of sulfur dioxide from GOME

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We present global observations of vertical column density of sulfur dioxide simultaneously retrieved with ozone profiles. To reduce the strong dependence of air mass factor on wavelength in the fitting window, we directly fit  $\text{SO}_2$  weighting function calculated by on-line LIDORT radiative transfer model and weighted by GEOS-CHEM model fields of  $\text{SO}_2$  profiles. The conversion from slant to vertical column density and the dependence of air mass factor on viewing geometry, albedo, ozone, clouds and aerosols are therefore implicitly and carefully handled. The results illustrate a high sensitivity of the GOME to emitted  $\text{SO}_2$  from volcanic eruptions and anthropogenic sources.