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The effect of different aerosol models in the global one-step inversion of GOMOS occultation measurements.

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The GOMOS (Global Ozone Monitoring by Occultation of Stars) experiment onboard Envisat, operational since March 2002, has provided an extensive set of UV-Visible atmospheric transmittance spectra with global coverage. Using a method developed at BIRA-IASB, we retrieve gas concentration (O_3, NO_2, air) and aerosol extinction profiles in one step, without the usual artificial separation of the spectral and spatial inversion. In this way, all interdependencies between different species at different altitudes are present in the retrieval model. The optical extinction by gasses is characterized by laboratory-measured cross-sections. The optical behaviour of aerosols on the other hand is more complex. In search for an appropriate aerosol model, we have experimented with different analytical functions to describe aerosol extinction. The retrieval results are presented here.