



Radiance measurements in limb geometry are affected by scattering events in the volume of sensitivity (VOS). Therefore, strong gradients, for example in volcanic plumes lead to underestimations of plume altitude and aerosol optical thickness due to assuming horizontal homogeneity while retrieving aerosol extinction from the measured radiance. This issue can be solved by using proxy data which locate a plume horizontally. The method is applied to a SCIAMACHY measurement on 13th June 2011, right after the eruption of the Nabro volcano. Here, SO<sub>2</sub> VCD retrieved from SCIAMACHY measurements in nadir geometry are used to define the location of the volcanic plume (Penning de Vries et al., 2014). Courtesy: Steffen Dörner.