

Reprocessing of the GOMOS aerosol dataset : data retrieval and aerosol climatology

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The Limb Remote Souding Group is developing a new aerosol retrieval algorithm dedicated to the GOMOS experiment onboard Envisat, in the framework of the AERGOM project (ESA). The new algorithm greatly enhances the quality of the retrieval, mainly by improving the description of the spectral dependence of aerosol extinction and by performing a simultaneous inversion of all atmospheric species. This last aspect allows taking into account the correlations between the spectral inversion of each species, neglected in the operational GOMOS Level 2 inversion scheme. A climatology of GOMOS aerosol extinction is currently being developed from the new aerosol dataset processed using the AERGOM retrieval algorithm. The aim is to derive an extinction field on a 3D grid with a resolution of 2.5° in latitude, 10° in longitude and 1 km in the vertical direction. This second part of the work is performed in the framework of Aerosol_CCI, one of the 11 ESA Climate Change Initiative projects. The objective of Aerosol_CCI is to realize the full potential of ESA Earth's Observation archives by better understanding the differences between various aerosol algorithms, and by developing further innovative retrieval approaches to take maximum benefit of the combined information content of the different instruments. In this respect, the GOMOS data set makes possible the computation of suitable corrections to take into account the perturbations of tropospheric remote measurements by the stratospheric compound.