



## **Modelling absorbing aerosol with ECHAM-HAM: Insights from regional studies**

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Quantifying distributions and properties of absorbing aerosol is a basis for investigations of interactions of aerosol particles with radiation and climate. While evaluations of aerosol models by field measurements can be particularly successful at the regional scale, such results need to be put into a global context for climate studies. We present an overview over studies performed at the Leibniz Institute for Tropospheric Research aiming at constraining the properties of mineral dust and soot aerosol in the global aerosol model ECHAM6-HAM2 based on different regional studies. An example is the impact of different sources for dust transported to central Asia, which is influenced, by far-range transport of dust from Arabia and the Sahara together with dust from local sources. Dust types from these different source regions were investigated in the context of the CADEX project and are expected to have different optical properties. For Saharan dust, satellite retrievals from MSG SEVIRI are used to constrain Saharan dust sources and optical properties. In the Arctic region, on one hand dust aerosol is simulated in the framework of the PalMod project. On the other hand aerosol measurements that will be taken during the DFG-funded (AC)3 field campaigns will be used to evaluate the simulated transport pathways of soot aerosol from European, North American and Asian sources, as well as the parameterization of soot ageing processes in ECHAM6-HAM2. Ultimately, results from these studies will improve the representation of aerosol absorption in the global model.