Geophysical Research Abstracts
Vol. 13, EGU2011-2206, 2011
EGU General Assembly 2011

Dimming and brightening in 20th century Europe as seen by ECHAM5-HAM

Doris Folini (1) and Martin Wild (2)

(1) ETH Zurich, Institute for Atmospheric and Climate Science, Switzerland (doris.folini@env.ethz.ch), (2) ETH Zurich, Institute for Atmospheric and Climate Science, Switzerland (martin.wild@env.ethz.ch)

We investigate the relative importance of different anthropogenic aerosol emissions for European surface solar radiation in the 20th century by means of multi-decadal transient GCM simulations. The GCM is the ECHAM5-HAM, aerosol emissions are taken from the National Institute for Environmental Studies (NIES). An ensemble of control runs was carried out, as well as simulations in which emissions of individual aerosols categories were frozen at their 1950 values (geographical distribution and total amount). Aerosol categories considered include SO2 and black carbon from fossil fuel combustion as well as black carbon from biomass burning. The results from the different experiments are discussed in the context of global brightening / dimming.