



Modelling direct radiative effect of mineral dust with the NMMB/BSC-CTM for dust outbreak events over the Mediterranean in summer 2012

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Aerosols interact with the atmospheric system scattering and absorbing solar radiation, with a significant impact on atmospheric energy and hydrologic processes. Radiative forcing associated with these perturbations affects climate and meteorology. In this contribution, we analyse model results of the Direct Radiative Effect (DRE) of mineral dust over the western-Mediterranean during summer 2012. For that, the NMMB/BSC Chemical Transport Model (NMMB/BSC-CTM) is applied on a regional domain at 0.1° horizontal resolution. The NMMB/BSC-CTM is a new on-line chemical weather prediction system coupling atmospheric and chemistry processes. In the radiation module of the model mineral dust is treated as a radiatively active substance interacting both short and longwave radiation. The impact of the mineral dust outbreaks on meteorology is discussed by comparing model forecasts with atmospheric analysis and meteorological observations. The analysis focuses in the vertical structure of the atmosphere and the resulting surface meteorological conditions.

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