



Evaluation of Aerosol Optical Depth by AERONET, MODIS and MISR over the Mediterranean and Middle East in 2006.

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The objective of this study is to evaluate the spatial and temporal variation of the aerosol optical depth (AOD) and to identify the main characteristics of the aerosol episodes for the Mediterranean area, with the focus on the year 2006. We evaluate aerosol optical properties of MODIS and MISR instruments with AERONET. In general the yearly mean MODIS and MISR AOD is in good agreement with AERONET and the temporal AOD variation is also in good agreement. High AODs observed by AERONET, MODIS and MISR are caused by natural dust events or high anthropogenic aerosol concentrations in the combination with stagnant meteorological conditions. The comparison of MODIS and MISR aerosol optical properties with AERONET for June reveals that the AODs, Angstrom coefficients and single scattering albedos agree well with AERONET and indicate the presence of natural dust in the Mediterranean. In general MISR AOD is lower than MODIS AOD during summer. Comparing MODIS Aqua Deep Blue with MISR for June over the Saharan desert reveals some differences in the location and the maxima of the AOD values. The seasonal AOD variation by MISR over the Mediterranean and Middle East shows substantial differences in the AODs for each season. Higher dust loads during spring and autumn time in the eastern part of the Mediterranean. Biomass burning activities around the Black Sea during July and August (e.g. agricultural waste burning) cause high AODs and the particles are transported to the eastern part of the Mediterranean, because of the dominant northerly wind direction during summer.