



A comparison between MODIS Dark Target, Deep Blue and MAIAC Aerosol Algorithms over North Africa

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MODIS is a wide field-of-view sensor providing daily global observations of the Earth. Currently, global MODIS aerosol retrievals over land are performed with the main Dark Target algorithm complimented with the Deep Blue Algorithm over bright deserts. The Dark Target algorithm relies on surface parameterization which relates reflectance in MODIS visible bands with the $2.1 \mu\text{m}$ region, whereas the Deep Blue algorithm uses an ancillary angular distribution model of surface reflectance developed from the time series of clear-sky MODIS observations. Recently, a new Multi-Angle Implementation of Atmospheric Correction (MAIAC) algorithm has been developed for MODIS. MAIAC uses a time series and an image based processing to perform simultaneous retrievals of aerosol properties and surface bidirectional reflectance. It is a generic algorithm which works over both dark vegetative surfaces and bright deserts and performs retrievals at 1 km resolution. We will provide an overview of three different approaches and will compare their aerosol products over selected AERONET sites as well as over the region of North Africa. This analysis will be complimented with aerosol data from OMI and MISR.