Abstract

This study sought to investigate the spatial and temporal variations of aerosols over East Africa based on Moderate Resolution Imaging Spectroradiometer (MODIS) satellite sensor. A Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) model was used for trajectory analysis in order to reconstruct the origins of air masses and understand the Spatio-temporal variability of aerosol concentrations. MODIS aerosol data (2001 to 2012) revealed decreasing aerosol loading over East Africa. An assessment of seasonal variability in AOD revealed maximum AOD values during the December –January –February (DJF) and June –July –August (JJA) season. Back trajectory analyses indicated that aerosols reaching East Africa were transported from either Arabian and Indian sub continent or western parts of the Indian Ocean. Therefore, long term and more comprehensive satellite AOD retrievals are necessary in order to achieve a better understanding of spatial and temporal variations in aerosols over East Africa.