



Mineral dust over West Africa : Highlights from the AMMA international program

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The “Sahelian belt” is known as a region where mineral dust content is among the highest in the world. In the framework of the AMMA international Program, a strategy combining long-term and intensive field measurements and modelling have been developed to investigate the variability of the mineral dust content and properties over West Africa. A “Sahelian Dust Transect” composed of three stations (Banizoumbou (Niger), Cinzana (Mali) and M’Bour (Senegal)) aligned at 13°N, has been deployed since January 2006. It provides a set of aerosol measurements for the determination of the mineral dust budget at the regional scale: column-integrated aerosol optical depth from AERONET, PM10 surface mass concentration and total and wet deposition flux. Additional intensive measurements at super-site of Banizoumbou (Niger) provided information on local aeolian activity and detailed information on dust size distribution during the wet and dry season. Mineral dust content has been modelled with the CHIMERE-Dust model for the year 2006, for which both intensive field measurements and regional monitoring data are available. The main characteristics of the mineral dust cycle over the Sahel and the capability of the model to simulate some of these characteristics will be described and discussed.