



Multi-annual variability of mineral dust atmospheric content over West Africa monitored by the AMMA Sahelian Dust Transect

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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 transect of 3 ground based stations, the “Sahelian Dust Transect”, has been deployed in order to obtain quantitative information on the mineral dust content over the Sahel. The three stations : Banizoumbou (Niger), Cinzana (Mali) and M’Bour (Senegal) are aligned at 13°N along the east-west main pathway of the Saharan and Sahelian dust toward the Atlantic Ocean. The SDT 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. In this presentation, we analyse the temporal variability of the atmospheric dust content at various time-scales. The seasonal cycle of the surface concentrations and of the aerosol optical depths and their interannual variability is discussed regarding the local meteorology. A typical diurnal cycle of the dust concentration is established both for the dry and for the wet season that can be linked to local dynamical conditions.