



## **Multi-platform observations of a representative springtime case of Bodélé and Sudan dust emission, transport and scavenging over West Africa**

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In this paper, we report on airborne observations of the African Easterly Jet and Saharan Aerosol Layer structures, as well the distribution of dusts, acquired over Niger and Benin during major dust emission events from the Bodele and West Sudan, in the framework of the AMMA SOP. The objectives are to provide insight into : (i) the transport patterns between the source regions and Benin and surrounding countries, (ii) the impact of the variability of the emissions in the dust source regions on the dust load and distribution over Benin, (iii) the respective impact of emission and transport processes with respect to scavenging processes over Benin on the dust load and the vertical distribution of aerosols, and (iv) the relationship between the vertical distribution of dust aerosols and dynamical as well as thermodynamical variables over Benin. The Airborne lidar and dropsonde measurements described herein were made during a "north-south land-atmosphere-ocean interaction" mission over Benin, part of Niger and of the Gulf of Guinea along a north-south oriented transect, on 13 and 14 June 2006 by the Service des Avions Français Instrumentés pour la Recherche en Environnement (SAFIRE) Falcon 20 (F/F20). Aircraft operations over Benin on 13 and 14

June 2006 were performed before and after the passage of a MCS which initially developed in the vicinity of the Joss plateau in Nigeria. Complementary ground-based, airborne from the SAFIRE ATR 42 and satellite observations, as well as European Centre for Medium-range Weather Forecasts analyses are also used.