

Overview of the DACCIWA ground-based field campaign in southern West Africa

Fabienne Lohou (1), Norbert Kalthoff (2), Barbara Brooks (3), Gbenga Jegede (4), Bianca Adler (2), Adewale Ajao (4), Muritala Ayoola (4), Karmen Babić (2), Geoffrey Bessardon (3), Claire Delon (1), Cheikh Dione (1), Jan Handwerker (2), Corinne Jambert (1), Martin Kohler (2), Marie Lothon (1), Xabier Pedruzo-Bagazgoitia (5), Victoria Smith (3), Lukman Sunmonu (4), Andreas Wieser (2), and Solène Derrien (1)

(1) Laboratoire d'Aérodynamique, Université de Toulouse, CNRS, UPS, France, (2) Institute of Meteorology and Climate Research, Karlsruhe Institute of Technology (KIT), Germany, (3) National Centre for Atmospheric Science, School of Earth and Environment, University of Leeds, United Kingdom, (4) Department of Physics & Engineering Physics, Obafemi Awolowo University, Nigeria, (5) Wageningen University and Research, The Netherlands

During June and July 2016, a ground-based field campaign took place in southern West Africa within the framework of the Dynamics-aerosol-chemistry-cloud interactions in West Africa (DACCIWA) project. In the investigated region, extended low-level stratus clouds form very frequently during night-time and persist long into the following day influencing the diurnal cycle of the atmospheric boundary layer and, hence, the regional climate. The motivation for the measurements was to identify the meteorological controls on the whole process chain from the formation of nocturnal stratus clouds, via the daytime transition to convective clouds and the formation of deep precipitating clouds. During the measurement period, extensive remote sensing and in-situ measurements were performed at three supersites in Kumasi (Ghana), Savè (Benin) and Ile-Ife (Nigeria). The gathered observations included the energy-balance components at the Earth's surface, the mean and turbulent conditions in the nocturnal and daytime ABL as well as the de- and entrainment processes between the ABL and the free troposphere. The meteorological measurements were supplemented by aerosol and air-chemistry observations. We will give an overview of the conducted measurements including instrument availability and strategy during intensive observation periods.