German Aerospace Center

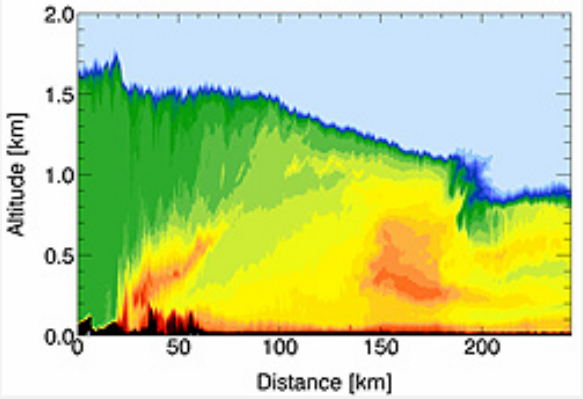
ARCHIVED

Press releases 2008

Falcon investigates pollution from the Dakar metropolis into desert dust layers

26 February 2008

DLR Research aircraft Falcon over Africa



Lidar (Laser-Radar) cross-section of the city of Dakar

The German Aerospace Centre (DLR) have been measuring Saharan desert dust as part of the Saharan Mineral Dust Experiment SAMUM, funded by the German researchers from the Deutsche Forschungsgemeinschaft. The measurements used the DLR research aircraft *Falcon* operating from the Cape Verde Islands.

On 29 January, scientists from the DLR Institute of Atmospheric Physics conducted a very successful research flight focusing on the entrainment of urban pollution from the city of Dakar into desert dust layers above the city. Dakar is the capital of Senegal with an area of 550 square kilometres and a population of more than 2.5 million residents.

Falcon traversed Dakar at high altitude to measure vertical profiles of aerosol particles and water vapour in the urban plume by means of an airborne lidar system (the WALES demonstrator instrument). In a second flight sequence, *Falcon* crossed the Dakar area at very low altitude (below 1 km) to sample the polluted air with all the instruments operated onboard the aircraft.

After stopover and refuelling at Dakar International Airport, the team onboard the aircraft studied the mixing and processing of urban pollution and desert dust during atmospheric transport out on the Atlantic Ocean. During the entire study, Dakar was covered by a dense dust layer of 1.5 km thickness.

The experiment provides important information on the impact of large cities on Earth's climate. The Dakar case study will serve as a master copy for future experiments on climate effects of potential megacities in arid environments.

Related Contacts

Hans-Leo Richter
German Aerospace Center
Corporate Communications, Editor, Aeronautics Research
Tel: +49 2203 601-2425

Fax: +49 2203 601-3249
E-Mail: Hans-Leo.Richter@dlr.de

Contact details for image and video enquiries as well as information regarding DLR's terms of use can be found on the DLR portal imprint.