AEROCLO-sA F20 Uhsas

General information

Dataset name:	AEROCLO-sA F20 Uhsas
Dataset DOI:	10.6096/AEROCLO.1755
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Contact(s)

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Period

Date begin (yyyy-mm-jj):	2017-09-05
Date end (yyyy-mm-jj):	2017-09-12

Project(s)

AEROCLO

Data description

Abstract

Dataset with UHSAS Measurements (Ultra High Sensitivity Aerosols Spectrometer).

The UHSAS measures aerosol number concentration between 0.06 and 1 ?m in diameter in 99 logarithmically spaced bins.

Size bins are nominal and do not take into account the ambien refractive index.

Instrument information

Sensor

Instrument type:	AEROSOL/CLOUD PARTICLE SIZER
Manufacturer:	DMT
Model:	UHSAS Spectrometer

Sensor resolution

Observation frequency:	1Hz

Geographic information

Falcon 20 Safire

Location name:	Falcon 20 Safire
Plateform type:	F-FALCON 20

Measured parameter

Aerosol Particle Properties

Parameter keyword:	Atmosphere > Aerosols > Aerosol Particle Properties
Unit:	particles/cm³
Acquisition methodology and quality:	The computer controlling the in situ probes on the Falcon-20 experienced a time lag which was only noticed prior to the last two flights, fs170014 and fs170015. The correlation between the vertical profiles of aerosol extinction at 532 nm from the lidar and the merged size distribution from the in situ probes was used to determine the time lag during each flight. This was done by applying a series of time lags between 0s and 160s and observing the maximum correlation. A clear trend in the time lag becoming larger from the beginning of the campaign was observed. The following table indicates the time lag that yielded the maximum coefficient of determination and the value that has been applied to the in situ data. Flight: Time lag (s) fs170006: 90 fs170007 : NA fs170008 : 90 fs170009 : 90 fs170010 : 100 fs170011: 100 fs170012: 125 fs170013: 130 fs170014: 0 fs170015: 0

Data use information

Use constraints:	This work was supported by the French National Research Agency under grant agreement n° ANR-15-CE01-0014-01, the French national programme LEFE/INSU, the Programme national de Télédetection Spatiale (PNTS, http://www.insu.cnrs.fr/pnts), grants n° PNTS-2016-02 and PNTS-2016-14, the French National Agency for Space Studies (CNES), and the South African

National Research Foundation (NRF) under grant UID 105958. The research leading to these results has received funding from the European Union's 7th Framework Programme (FP7/2014-2018) under EUFAR2 contract n°312609". Airborne data was obtained using the F20 Atmospheric Research Aircraft managed by Safire, which is a joint facility of the CNRS, Météo-France and the CNES.

Data policy: AEROCLO data policy