

IFF_ALADINA-RPAS_Save

General information

Dataset name: IFF_ALADINA-RPAS_Save
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Period

Date begin (yyyy-mm-jj): 2016-07-02
Date end (yyyy-mm-jj): 2016-07-17

Project(s)

DACCIWA > WP1 - Boundary Layer Dynamics

Data description

Abstract

The aircraft ALADINA is equipped with meteorological sensors for observing temperature (slow and fast sensor available), humidity (two different sensors available) and the wind speed vector (calculated from the flow angles alpha and beta of a five-hole probe, together with dynamic pressure and attitude). Further, an upward and a downward looking pyranometer are available. The data can be used to estimate cloud coverage, but cannot be used as absolutely calibrated values. Additionally, time, latitude, longitude, altitude and attitude of the aircraft are available. The data are provided for each of the records separately. A document providing the time sections for the different parts of the flight (vertical profiles, straight legs) is additionally included.

Observing strategy

The typical flight of around 30 to 40 min duration consisted of at least one vertical profile up to 1000 m (in case of low clouds: directly below the cloud base) and a star pattern with straight legs of at least 1 km length at constant altitude, with several altitudes for each flight.

References

Altstädter, B., Platis, A., Wehner, B., Scholtz, A., Wildmann, N., Hermann, M., Käthner, R., Baars, H., Bange, J., and Lampert, A.: ALADINA ? an unmanned research aircraft for observing vertical and horizontal distributions of ultrafine particles within the atmospheric boundary layer, *Atmos. Meas. Tech.*, 8, 1627?1639, 2015.

Instrument information

Sensor

Instrument type: Probes
Instrument features / Calibration: 5-hole probe

Sensor resolution

Observation frequency: 100 Hz

Geographic information

Save Airport

Location name: Save Airport
Platform type: ALADINA
West bounding coordinate (°): 2.454
East bounding coordinate (°): 2.473
North bounding coordinate (°): 8.025
South bounding coordinate (°): 8.007
Altitude max: 1600

Measured parameter

Alpha

Parameter name: alpha
Unit: degrees - degrees
Acquisition methodology and quality: needed sophisticated calibration caused by installation issues.

Data use information

Use constraints: The research leading to these results has received funding from the European Union Seventh Framework Programme FP7/2007-2013) under grant agreement n° 603502.

Data policy: DACCIIWA data policy

Database: Dacciwa database

Original data format(s): Text