

The HALO database

K. Gottschaldt

HALO database

Abstract

The observations made with the HALO research aircraft entail a large amount of data of relevance to various scientific communities (atmosphere & climate, earth observation, geoscience). The HALO database is a data retrieval and long-term archiving system with a web front-end. It allows users to access a wide range of data based on, or related to, observations with HALO. The database is also used for sharing data of scientific missions involving other DLR research aircraft or instruments. Flight track data from the database are routinely provided immediately after a campaign as input for model simulations. The web front-end of the database offers tools for (meta-) data search, as well as for uploading, updating and downloading of primary data. Queries can be extended to include IAGOS data. Some functionality of the HALO database is available to registered users only. The access to primary data is managed on a mission-by-mission basis. Additional functionality is available for the coordinators of a campaign to control access to and appearance of individual missions in the web portal. This presentation provides a brief overview of the HALO database and addresses some frequently asked questions on how to use it.



<https://halo-db.pa.op.dlr.de>

Scope

- Tailored to low-volume data of aircraft observations
- Atmospheric sciences, geophysics
- Focus on data from HALO and DLR-Falcon, open to data from other research aircraft
- Model data and other measurements related to aircraft campaigns
- Data above processing level 1B (NASA Ames, NetCDF, GTE)
- Currently listed: ~70 missions, ~1000 flights, > 4000 data sets, ~480 users



Data sets: HALO 48% Falcon 34% Other 14% Models 4%

Roles & Privileges

- ✓ Yes
- ✓ Yes, own mission
- ✓ Yes, own data
- No

		logged in					
		Public	User	Co-worker	Admin	PI	halo-db@dlr.de
View	metadata	✓	✓	✓	✓	✓	✓
	personal data	—	✓	✓	✓	✓	✓
Primary data	download	—	—	✓	✓	✓	—
	upload	—	—	✓	✓	✓	—
	update	—	—	✓*	✓*	✓*	—
	delete	—	—	—	—	—	✓
Create	instrument	—	✓	✓	✓	✓	✓
	platform	—	—	—	—	—	✓
Mission page	create	—	—	—	—	—	✓
	modify	—	—	—	—	—	✓
Grant / Revoke	mission PI	—	—	—	—	—	✓
	mission Admin	—	—	—	—	—	✓
	mission Co-worker	—	—	—	—	—	✓
Enforce	HALO-DB User	—	—	—	—	—	✓
	data protocol	—	—	—	—	—	✓

How to

... get a mission site at HALO-DB

Please enquire at halo-db@dlr.de and specify:

- Mission name
- Location
- Mission PI
- Acronym
- Startdate
- Website
- Description
- Stopdate
- Picture / Logo

... download primary data

Access is granted on a per-mission basis!

1. [Register](#) @ HALO-DB (User = email address)
2. [Sign in](#) [Reset password anytime via Register](#)
3. Ask a PI or Admin of the desired mission to add you to the list of co-workers
4. [Download](#) buttons will show up next to the datasets

... prepare data

- Please follow the format-specific [Conventions](#)
- Download a file from HALO-DB and use as template
- Avoid Extended ASCII
- Contact halo-db@dlr.de in case of trouble

... upload data

1. Make sure you are a co-worker of the mission
2. Follow the [Data Upload](#) dialogue

Data sets are assigned to individual flights of the mission

Example

The screenshot shows the HALO database web interface for a mission named 'ML-CIRRUS'. It includes sections for 'DESCRIPTION', 'MAP OF THE MEASURING AREA', 'LICENSE', 'DATA PROTOCOL', 'MISSION CREW MEMBERS', 'FLIGHTS', and 'AVAILABLE DATASETS'. The interface is user-friendly with navigation buttons and detailed information for each mission.

Acknowledgements

Funding for the initial development of the HALO database by the Leibnitz Institut für Troposphärenforschung was provided by DFG through the HALO-SPP 1294. Since 2013 this service to the HALO community has been maintained by the Institute of Atmospheric Physics of DLR in Oberpfaffenhofen. R. Hengst, D. Böhmer, B. Brötz, C. Knoth and K. Renner contributed to HALO-DB software development and layout.

Structure

