

	NAWDEX 2016 Planning summary	Date: 12 October 2016 Author:
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NAWDEX 2016 - Planning summary

Today's surface winds in Keflavik are again very strong and do not allow flights with HALO and FALCON. Rainfall is very intense since yesterday evening and the Icelandic Met Office issued a flood warning. Despite this, we are planning a long HALO flight into the evolving upper-level ridge tomorrow (Thu 13 Oct), including coordinated legs with FALCON and SAFIRE, an overpass at Andoya research station, and a relatively low-level leg over Iceland to capture gravity waves.

Synoptic evolution

- **Wed 12 Oct:** The "downstream cyclone of TC Matthew" is rapidly moving towards Iceland and strongly intensifying until midnight. Strong moisture fluxes lead to heavy precipitation along the south coast of Iceland (predicted to last until early Friday). Very strong winds prevail all over Iceland.
- **Thu 13 Oct:** The cyclone becomes mature between Greenland and Iceland and weakens rapidly. North of Iceland a strong ridge forms and rapidly expands into the Arctic. High-impact weather occurs over Iceland and in Southern France.

Flights on Wednesday 12 October

Surface gusts in Keflavik exceed 40 kts and therefore the planned flights for HALO and FALCON had to be cancelled at 11 UTC. The afternoon flight with SAFIRE is still planned.

IOP12 on Thursday 13 October

Flights are planned with all aircraft:

- HALO will do a long flight (take off time 8 UTC, duration 9 hours) along the edge of the upper-level ridge to almost 80N, then east to Andoya (overpass of research station), then across the ridge back to Iceland where several special legs are planned: (i) common leg with FALCON across the jet west of Iceland, (ii) common leg with SAFIRE over Iceland, (iii) leg at FL300 to observe orographic gravity waves over Iceland. Most of the ridge appears to be covered by cirrus clouds, with WCB outflow at its western and northern edge. The additional aim of a satellite overpass has been cancelled because it would have required an earlier take off time when winds are potentially still too high.
- Two flights are planned with FALCON: (1) box pattern across the jet west of Iceland (take off 12:35 UTC, duration 3 hours); and (2) back and forth across two jets west of Iceland (take off 17:30 UTC, duration 3.5 hours).
- SAFIRE will fly two legs with HALO and one leg with both HALO and FALCON near Iceland.

Friday 14 October

This will be the last option to do the ISMAR radiometer intercomparison flight of FAAM, SAFIRE and HALO. According to the forecasts, the cloud scene along 61N, between about 8-15W, looks favorable (cirrus clouds of various thickness, not too high such that all aircraft could fly above). Discussions will continue during the day to then take a common decision about this flight. The meeting point near 61N/15W would be at 9:30 UTC. HALO could combine this flight with an A-Train overpass at 12:53 UTC.

Responsibilities:

- Scientific Manager: Heini Wernli
- Technical Manager: Katrin Witte
- Chief Forecaster: Paolo Ghinassi / Matthias Röthlisberger
- Instrument Manager: Manuel Gutleben
- Coordinator Ground-Based Observations: John Methven / Lucas Höppler
- Mission scientists for HALO on Thu: Florian Ewald (mission scientist), Julia Mack, Tobias Selz, Maxi Böttcher (Ground Support)