

Maria S Merian 0201 (01 February 2020)

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1. Objective

Finished the first long science mission with the cloud kite very successful – launch 17:00 (0131) and recovery next day (0201) 08:00. Unbelievable imaging and droplet statistical data. Great success for the Cloudkite team. Continued 4 h radiosounding (likewise on IAtalante but 2h shifted). Continued with joint IATALANTE/ MERIAN submesoscale sampling until about 13:00 – then splitting to rejoin 0202 in a cold filament ($\Delta T = 1\text{deg}$ over 50km) to perform a detailed atmosphere/ocean survey.

2. Synoptic Situation

No report

3. Cruise-day Elements

Approx. Time (local)	Operation	Latitude	Longitude	Comm
	Merian/IAtalante dynamical front survey – WP reached	7°45'N/52°20'W uCTD (every 30') MSS (every 1.5h)		6kn
08:00	Recovery cloud kite	At position		
12:30	Merian/IAtalante dynamical front survey waypoint reached	uCTD (every 30') MSS (every 1.5h)		6kn
12:30	Split from IATALANTE Transit to cold filament WP: 6°12'N/53°48W (150nm)	uCTD (every 30') MSS (every 1.5h)		7kn
13:00	Daily Meeting (Conference room)	Gaute		
Conti.	Transit to cold filament WP: 6°12'N/53°48W	uCTD (every 30') MSS (every 1.5h)		7kn

Inter-calibration: with IAtalante

CTD Stations: see table

Overflights: no

4. Instrument Status

Operational:

Ocean – ADCP 38 & 75kHz; TSG; X-Band Radar; Underway O2, Chl-a (spectrometer); Incubation (PP; filtration); Nutrient/lab analysis; CTD/O2 +rosette; Moving vessel profiler; Microstructure sonde; Ferrybox pCO2; MIMS (O2/Ar, DSMS), underway CTD

Glider ifm09; ifm 03; ifm12 (see <https://gliderweb.geomar.de/> -> swarm 12;

Atmosphere – Halo Wind Lidar; Disdrometer; W-Band Radar. MRR (rain), sun photometer, Cloudcamera; SMPS (Aerosol; ship based); radiosondes; DWD Metrology package (incl. radiation); ARTHUS Raman Lidar; Splash drone (atmospheric state parameters); – MPCK+ (atmospheric state parameters+cloud microphysics; Cloudkite); Mini MPCK (atmospheric state parameters and fluxes; Cloudkite); SMPS (Aerosol; Cloudkite)

No functioning: Ceilometer

5. Outlook

Steam southwest to a near coastal cold anomaly and do zig zag two ship survey over the front.

6. Figures





