Maria S Merian 0121 (21 January 2020)

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1. Objective

On way to eddy boulevard; Microbiology cast (3:30am); Upper ocean high resolution sampling with Moving Vessel Profiler. Microstructure casts; Cloudkite instruments preparation for first science deployment maybe Thursday (0123);

2. Synoptic Situation

Wind calmed down and so did swell;

3. Cruise-day Elements

Approx. Time (local)	Operation	Latitude	Longitude	Comm
	Continue southern Transit to waypoint	11° 22.50'N	58° 07.50'W	MVP: 7kn
03:30	CTD#7 – Bio	current position		Max z=600m
04:30	CTD#8 – Bio			Max z=200m
05:00	CTD#9 – Bio			Max z=200m
06:00	MSS – 3 casts			
	Continue southern Transit to waypoint			MVP: 7kn
	Prepare for uCTD operations	11° 22.50'N	58° 07.50'W	Vicinity eddy: uCTD operations 10kn
13:00	Daily Meeting (**Conference room**)			Topics of the day
	Continue southern Transit to waypoint	11° 22.50'N	58° 07.50'W	uCTD: 10kn

Inter-calibration: no

CTD Stations: biology (shortly before sun rise)

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; Glider ifm09 (https://gliderweb.geomar.de/html/ifm09_depl14_frame.html); Ferrybox pCO2; Microstructure sonde;

Atmosphere – Halo Wind Lidar; Disdrometer; W-Band Radar. MRR (rain), sun photometer, Cloudcamera; SMPS (Aerosol; ship based); radiosondes; DWD Metrology package (incl. radiation);

In preparation:

Ocean –; uCTD, MIMS (O2/Ar, DSMS)
Atmosphere – MPCK+ (atmospheric state parameters+cloud microphysics; Cloudkite); Mini MPCK (atmospheric state parameters and fluxces; Cloudkite); SMPS (Aerosol; Cloudkite); ARTHUS Raman Lidar; Splash drone (atmospheric state parameters);

No functioning:
Ceilometer

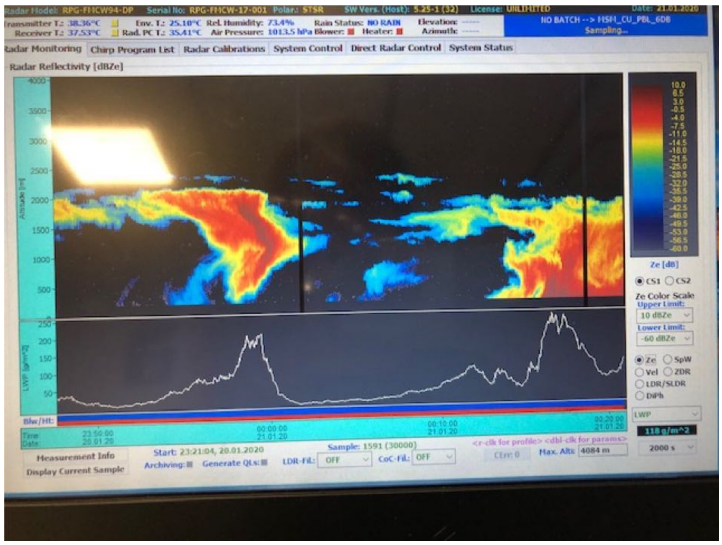
Note: The W Band Radar stable table continues to get stuck sometimes and needs continuous surveillance.

5. Outlook

W band radar to produce hourly plots of moments and compare with wind lidars observations, to derive cloud base height.
Cloudkite to install the large box to measure cloud microphysics including PIV and Holography.
More underwater gliders to prepare, uCTD system to make ready; ARTHUS to be further calibrated.

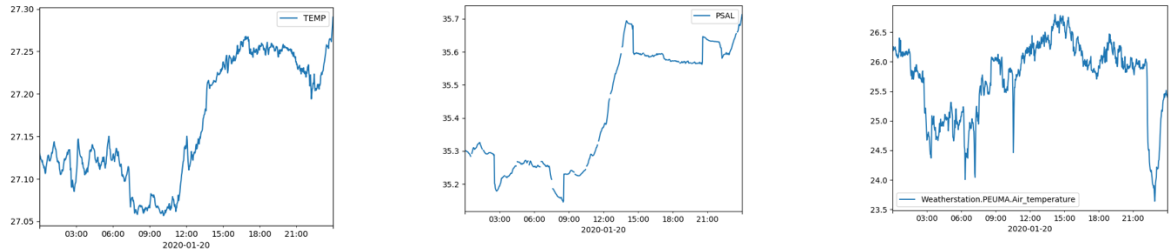
6. Figures

W Band Radar run tests for impact of noise level threshold (3 to 0 db) and defined a new setup for the observations from the radar, which allows us to scan for longer time in the boundary layer and have very small range gates in the first 4000 m. This feature makes the data suitable for comparison with LES simulations.

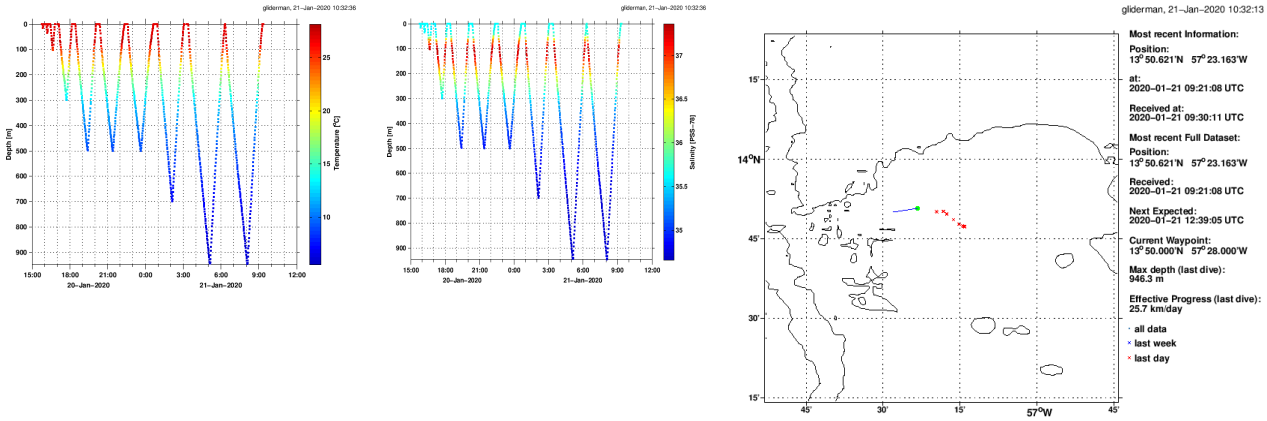


Cologne team on board has, with Lukas Pfitzenmayer (Uni Cologne), set up a quicklook browser to upload daily quicklooks from Uni Cologne instrumentation on Merian.

See:
http://gop.meteo.uni-koeln.de/~lpfitzen/eureca/dataBrowser/dataBrowser2.html?site=MSMerian&date=-1&UpperLeft=MSMerian_w-band_overview&UpperRight=MSMerian_w-band_met-station



Via the Deutsche Allianz für Meeresforschung e.V. (DAM) we receive daily underway data plots (processed at land by Dr. Michael Schlundt, GEOMAR)



First underwater glider profiles and location map (gliderweb.geomar.de/html/ifm09_depl14_frame.html)