Maria S Merian 0131 (31 January 2020)

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1. Objective

Continue frontal survey with lATALANTE. Launch cloud kite with sensor package. Continue MSS, uCTD, MVP. Every 4 h radiosounding (likewise on lAtalante but 2h shifted). Glider ifm03 has a leak and is drifting. No emergency recovery (too far off) but recovery when steaming north for the tradewind alley survey period (6.2.-12.2). Stopped negotiation process for entering Guyana EEZ.

2. Synoptic Situation

No report

3. Cruise-day Elements

Approx. Time (local)	Operation	Latitude	Longitude	Comm
15:30	Merian/lAtalante dynamical front survey of pancake & deep eddy Ocean/atmosphere exchange	same pos. (08° 12.00'N/53° 12.00'W) Waypoints: 08°12'N/54°00'W (50nm) 07°45'N/52°20'W (120nm)		5kn
03:30	CTD# 48 – Time critical!	At position		600m
	CTD# 49	same pos.		200m
	CTD# 50	same pos.		350m
	MSS casts (3)	same pos.		250m
	Atalante/Merian survey continued			
13:00	Daily Meeting (Conference room)			
	Atalante/Merian survey continued			
14:30	Cloudkite launch			
	Atalante/Merian survey continued			

Inter-calibration: nwith lAtalante

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;

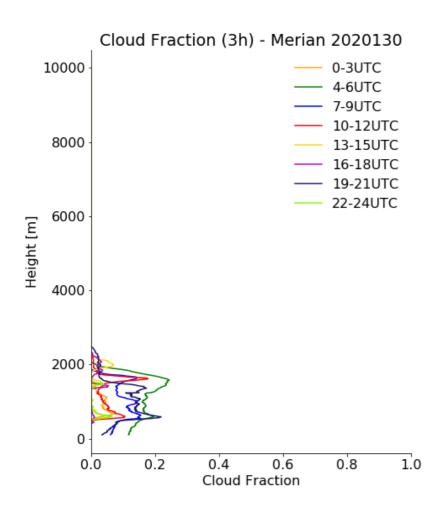
Atmosphere – Halo Wind Lidar; Disdrometer; W-Band Radar. MRR (rain), sun photometer, Cloudcamera; SMPS (Aerosol; ship based); radiosondes; DWD Metrology package (incl. radiation); ARTHUS Raman Lidar; Splash drone (atmospheric state parameters); – MPCK+ (atmospheric state parameters+cloud microphysics;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

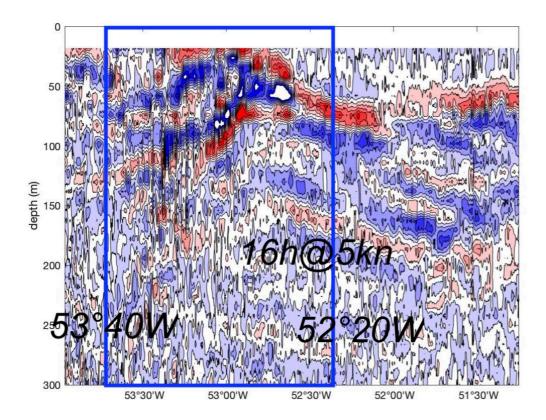
No functioning: Ceilometer

5. Outlook

Continue survey with lATALANTE. Recover Cloudkite at 8am. Steam southwest to a near coastal cold anomaly and do zig zag two ship survey over the front. Need to check if cloudkite operations are allowed close to land.

6. Figures





Near interial internal wave field fron box car filtered ADCP section data. The area of joint Merian/Atalante operations is indiacted.

