Maria S Merian 0124 (24 January 2020)

Johannes Karstensen (Chief Scientist)
0124,00:15, Position: 11°18.419'N/058°37.4227'W)

1. Objective

Continue eddy survey – crossing west to east through the determined centre (vertical structure 0-2000m depth with CTD; and MSS dissipation 0-150m for flux estimate). Radiosounding every 4h. Deployment of two underwater drones (glider) at northeastern side of eddy (expected survey time 4 weeks). First launch of Cloudkite with advanced sensor package (MPCK+). Deployment of SVP drifter in Vmax region.

2. Synoptic Situation

Calm wind and sea sate conditions; clouds;

3. Cruise-day Elements

Approx. Time (local)	Operation	Latitude	Longitude	Comm
23:30	CTD#20	11°18.42'N	58°37.19'W	2000m
	MSS – 3 casts	Same pos.		
02:30	CTD#21	11°23.03'N	58°24.65'W	2000m
	MSS – 3 casts	Same pos.		
05:30	CTD#22	11°27.66'N	58°12.11'W	2000m
	MSS – 3 casts	Same pos.		
08:30	CTD#22	11°32.29'N	57°59.56'W	2000m
	MSS – 3 casts	Same pos.		
09:30	2 x Glider deployment	Same pos.		Westward course within Barbados waters
13:00	Daily Meeting (**Conference room**)			
14:00	Cloudkite launch For 22h flight WP: 12°00.00'N, 056°45.00'W			
	uCTD to waypoint			6kn
	SVP Drifter Deployment	12°00.00'N,	56°45.00'W	

Inter-calibration: no
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; Glider ifm09 (https://gliderweb.geomar.de/html/ifm09_depl14_frame.html); Microstructure sonde; Ferrybox pCO2;

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);

In preparation:
　　Ocean –uCTD, MIMS (O2/Ar, DSMS),

　　Atmosphere – MPCK+ (atmospheric state parameters+cloud microphysics; Cloudkite); Mini MPCK (atmospheric state parameters and fluxes; Cloudkite); SMPS (Aerosol; Cloudkite);
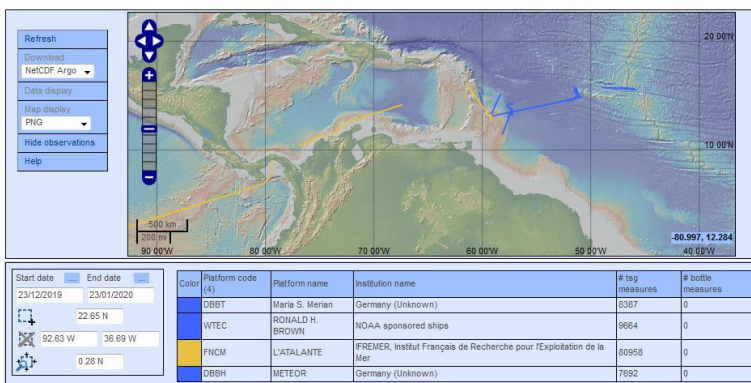
No functioning:
　　Ceilometer

Note: The W Band Radar stable table continues to get stuck sometimes and needs continuous surveillance.
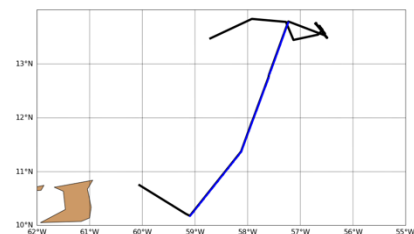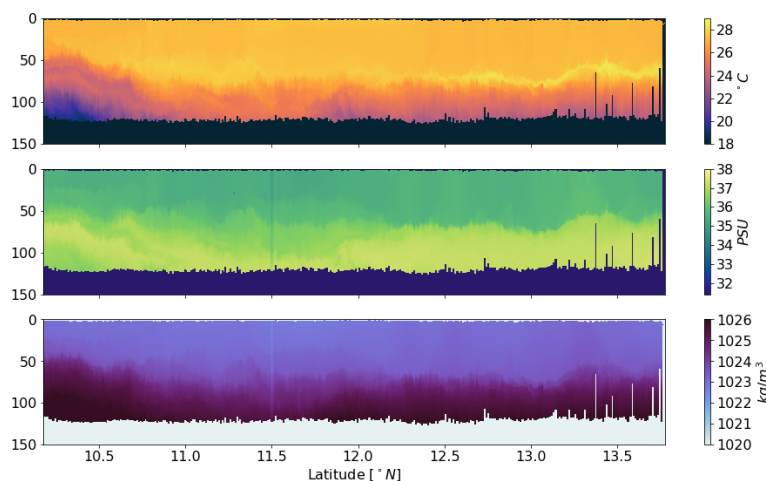
5. Outlook
Waiting for Guyana clearance to enter EEZ.

6. Figures

Automatic surface Temperature and salinity data trnsmission of all 4 ships is working – for use in weather and ocean forecast models.

Ocean upper layer (incl. Mixed layer) survey with MVP