

Maria S Merian 0126 (26 January 2020)

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0126,16:30 UTC

1. Objective

Continue eddy survey – crossing southwest to northeast through the determined centre (vertical structure 0-2000m depth with CTD; and MSS dissipation 0-150m for flux estimate). Radiosounding every 4h. First launch of Cloudkite with advanced sensor package (MPCK+) prepared. Three biology casts at 3:30am. Start underway CTD southeastern course

2. Synoptic Situation

See figures below for time series from yesterday

3. Cruise-day Elements

Approx. Time (local)	Operation	Latitude	Longitude	Comm
	uCTD to waypoint: 10° 46.00'N / 55° 43.00'W			6kn
13:00	Daily Meeting (Conference room)			
	uCTD to waypoint: 08° 33.00'N / 53° 50.00'W			10kn
	<i>SVP Drifter Deployment tbd</i>			
	<i>Cloudkite launch tbd</i>			
<i>Monday 27. January</i>				
03:30	CTD# – Zeit Kritisch!!	On way		600m
	CTD#	same pos.		200m
	CTD#	same pos.		200m

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; Microstructure sonde; Ferrybox pCO2; MIMS (O2/Ar, DSMS)

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);

In preparation:

Ocean –uCTD

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

Going southeast as Guyana clearance did not appear. All want to see the cloudkite operating and it looks as if this can happen today afternoon; Continue to compare records of rain from different devices (Radar; Lidar, cloudkite);

Submesoscale surface gradients in salinity found as well as short period (couple of hours) filament crossings in SST.

6. Figures

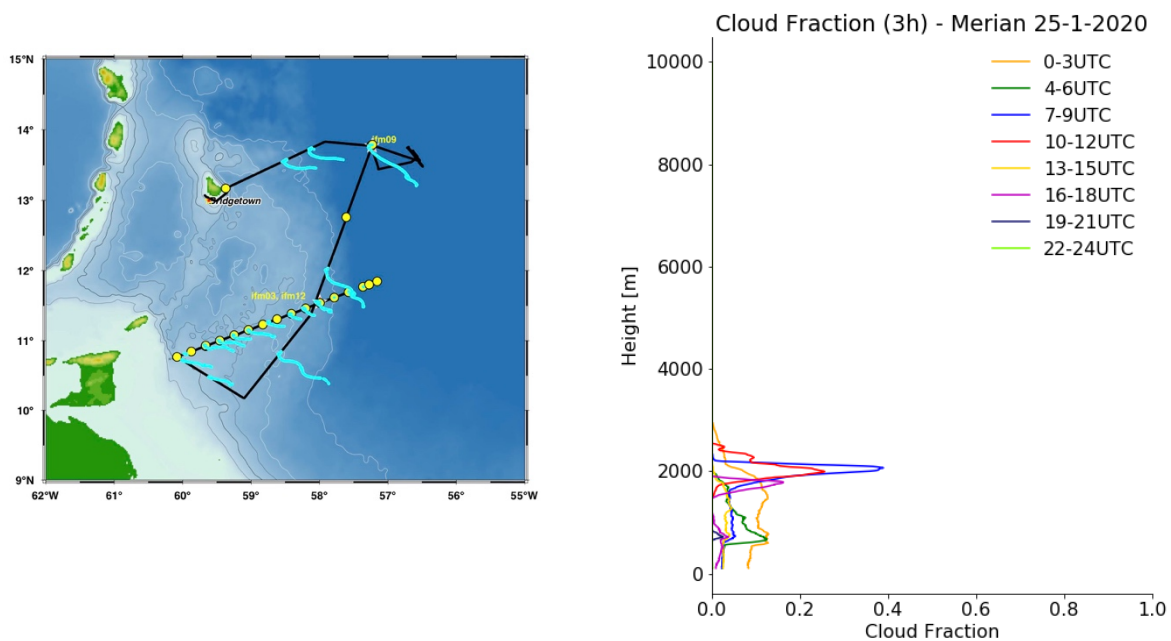
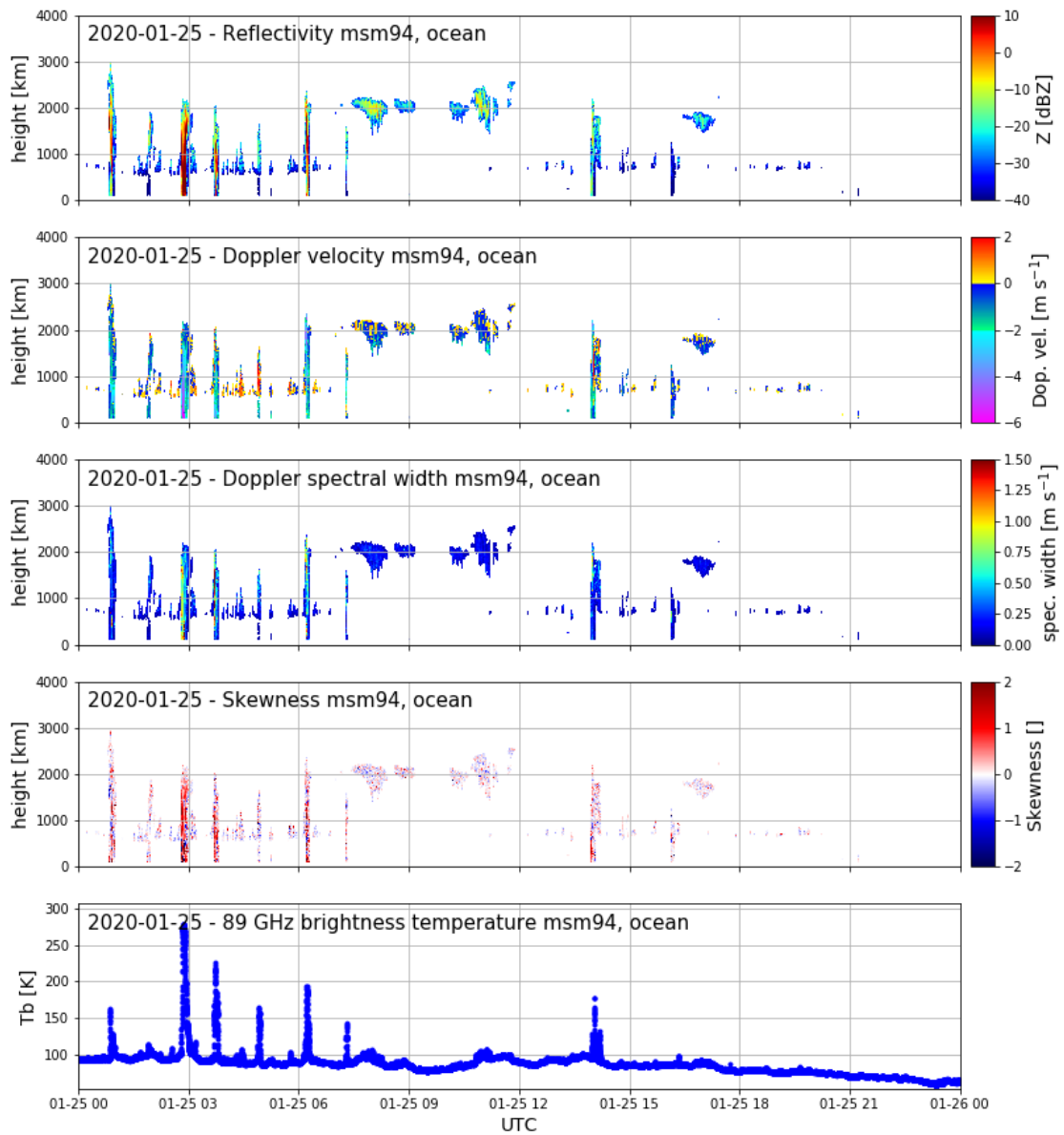
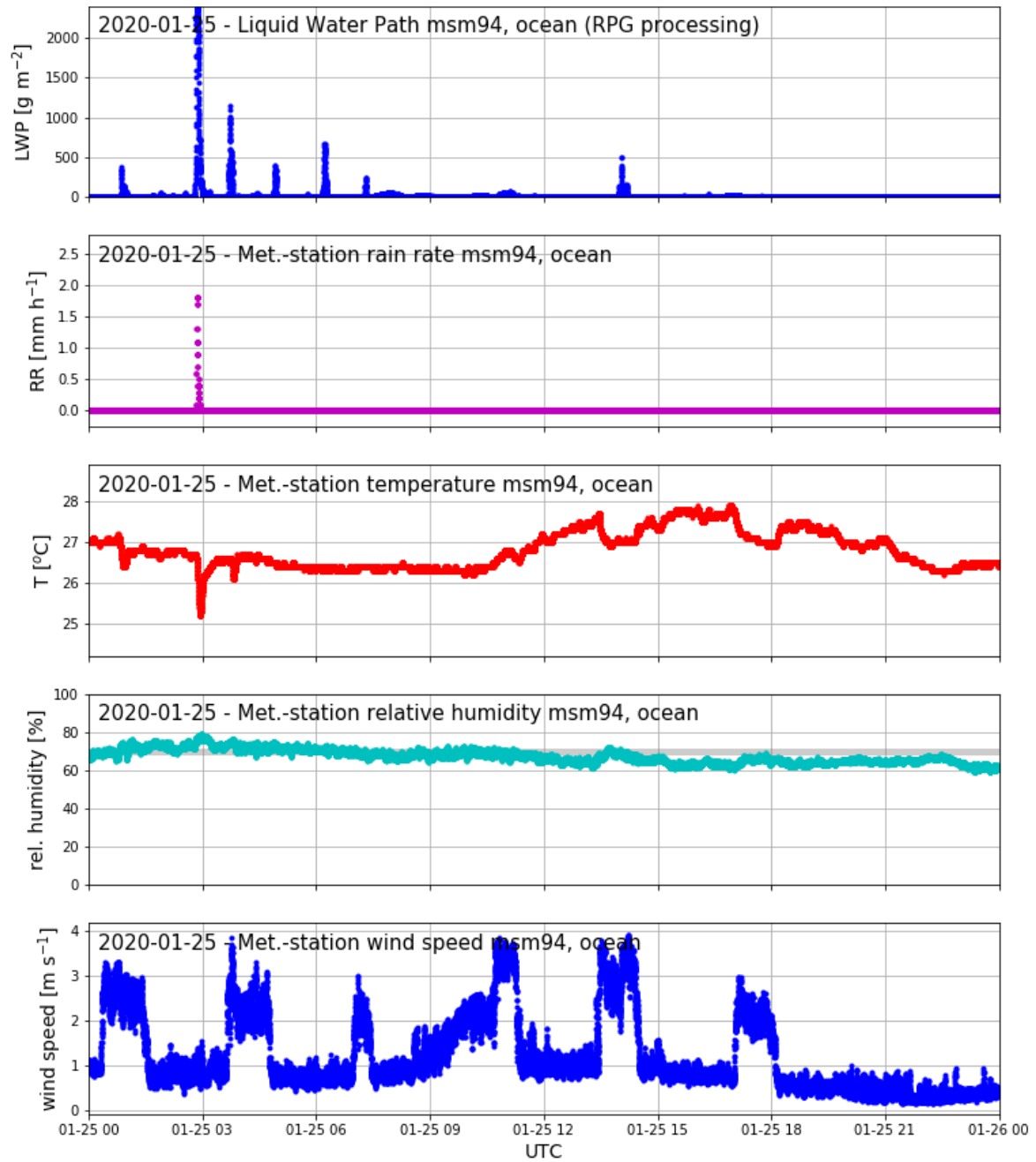


Figure 1: (left) Overview MSM89 track – CTDs (yellow dots), radiosondes (cyan dots), glider deployments (ifmxx), underway devices (black line). (right) cloud fraction for time intervals from Radar

Figure from Radar and neighboring met observation package for the 25. January 2020 – see text for quantities





Selected hourly interval

