

## Maria S Merian 0202 (02 February 2020)

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### 1. Objective

*Steam south for the cold/freshwater filament air/sea interaction study to be executed jointly with LATALANTE/ MERIAN. Three Bio CTD casts in 350m WD, then moving into shallower water. To meet again with the ATALANT for the joint survey. Staring survey along zigzag track crossing the front several times. Had to stop radiosounding to ensure enough radiosondes are available for the visit to trade wind alley, starting on the 07. Feb. Fortunately ATALANTE could completely take over radiosounding during the cold filament study. MPOCK could not be launched because of no flight permission for this area.*

### 2. Synoptic Situation

*No report*

### 3. Cruise-day Elements

Approx. Time (local)	Operation	Latitude	Longitude	Comm
	Transit to cold filament WP: 6°12'N/53°48W	uCTD (every 30') MSS (every 1.5h)		7kn
03:30	CTD# 50 – <b>Time critical!</b>	At position		600m
	CTD# 51	same pos.		200m
	CTD# 52	same pos.		350m
Conti.	Transit to cold filament WP update: 6°25'N on old track	<b>MVP (WD&lt;50m)</b>		10kn
14:30	CTD#53 Arrival cold filament Start joint lAtalante/Merian mapping + MSS	6°25'N	53°40.5'W	
15:30	Jointly with Atalante From WP to WP – with ~ 0.5 nm distance (Atalante is leading)	6°54'N	53°48'W	MVP 8kn
		6°24'N	54°04'W	
		6°54'N	54°04'W	
		6°32'N	54°22'W	
		7°06'N	54°22'W	
<b>Monday 03.02</b>				
Until 14:00	Joint patch sampling; split from lAtalante?? And move north for Picaro airspace			8kn
18:30	<b>New group/science meeting time</b>			

<b>Tuesday 04.02/ 12:00</b>	(140nm to go) Enter Piarco airspace	9°05'N	55°31'W	
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**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

*Stop zig zag sampling of the front by noon and steam to 9N (Piarco) for launch of MPCK. Hope to find clouds.*

#### 6. Figures





