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Short Cruise Report
R/V METEOR M181
Cape Town (South Africa) – Mindelo (Cape Verde)
17th April – 28th May 2022
Chief Scientist: Prof. Dr. Peter Brandt
Captain: Detlef Korte

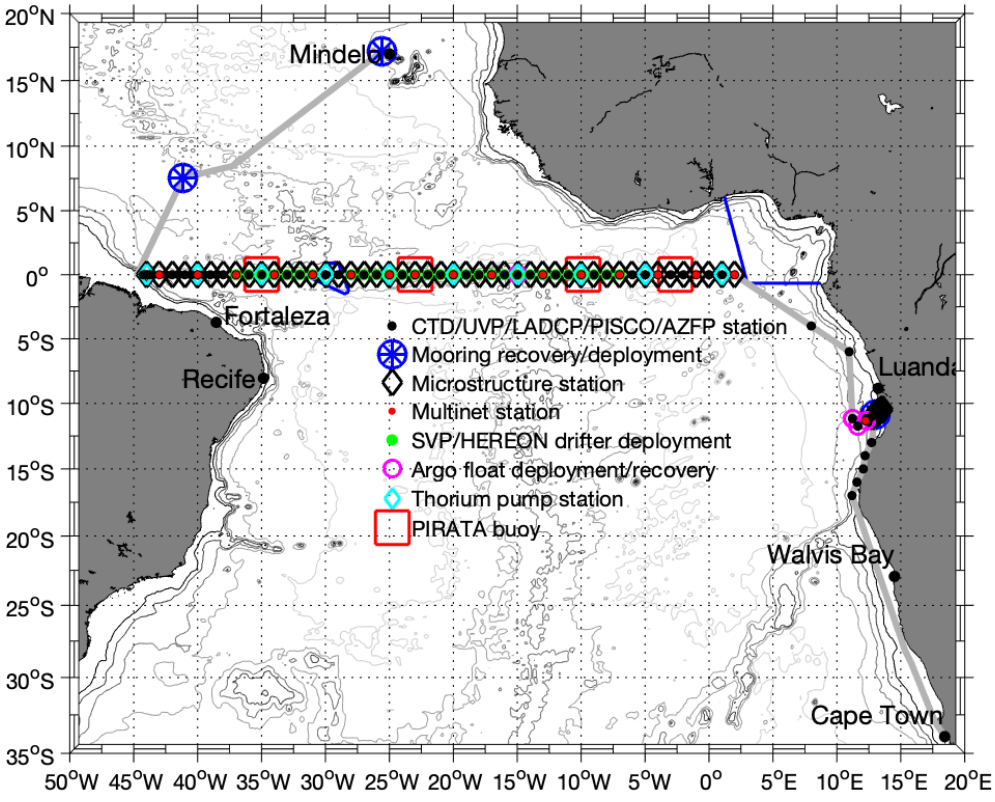

Fig.1: Bathymetric map with cruise track of R/V METEOR cruise M181 (grey solid line) including locations of CTD/UVP/LADCP/PISCO/AZFP stations, mooring recoveries and redeployments, microstructure and multinet stations, thorium pump stations and locations of drifter and float deployments. Territorial waters of different countries are marked with thin black solid lines. High-risk area for piracy in the Gulf of Guinea and the environmentally protected area of the Saint Peter and Saint Paul archipelago are marked by blue lines.

Objectives

Meteor cruise M181 was an interdisciplinary cruise focusing on upwelling in the tropical Atlantic, its physical forcing and its importance for biological production and plankton communities. Also studied were the associated chemical cycles, as well as on the current system that sets the background conditions for a downward carbon export. It was the second Transatlantic Equatorial Cruise (TRATLEQ II) as part of the EU-TRIATLAS program. Similar to TRATLEQ I, carried out in September/October 2019, this cruise sampled the whole equatorial section from the eastern to the western boundary and from the surface to the bottom. General aims of the two research cruises, which covered two different phases of the equatorial upwelling system (warm and cold phase), were to assess the status of the southeast and equatorial Atlantic marine ecosystem and to identify its physical drivers and the impact of climate variability and change. Central questions were which roles circulation and mixing play for the development of phytoplankton and zooplankton communities and more specifical how variable (regionally and seasonally) the export flux of carbon to mesopelagic and bathypelagic depths associated with particle flux and diel vertical zooplankton migration is.

The measurement program of TRATLEQ II included the section work along 11°S off Angola and along the equator starting at 2°E outside of the exclusive economic zone of Equatorial Guinea and ending at 44°45'W on the Brazilian shelf. A long-term mooring at 10°50'S, 13°E was serviced and additional mooring and instrument recoveries were performed on request on the way to Mindelo, Cape Verde. Observations along the sections included full-depth station work with the CTD system measuring temperature, salinity, pressure, oxygen, nutrients (NOx), turbidity, fluorescence, current velocity with the lowered acoustic Doppler current profilers (LADCP), particle size classes and plankton composition with an underwater vision profiler 5 (UVP5) and the Plankton Imaging with Scanning Optics system (PISCO), as well as backscatter measurements with an acoustic zooplankton and fish profiler (AZFP). Additional station work was carried out with a microstructure profiler measuring turbulent dissipation rates in the upper 120 m, an Hydrobios Multinet Midi for the collection of zooplankton samples in the upper 1000 m, an underwater pump system for thorium measurements, and a spectroradiometer for incoming and outgoing radiation at the sea surface. Water samples from the CTD rosette were analyzed for numerous variables including salinity, oxygen, nutrients, N_2O, thorium, dissolved and particulate organic matter, and prokaryotic community structure. N_2-fixation and primary production rates were determined through incubation of collected seawater. Underway measurements were performed with a vessel mounted 75-kHz Longranger ADCP for velocities in the upper 600 m (the usually used shipboard 75-kHz Ocean Surveyor ADCP failed during the previous cruise and could not be repaired in time), a marine radar for surface currents, the thermosalinograph for near-surface temperature and salinity, the CLASS - a dual laser spectrofluorometer for chlorophyll and phycoerythrin fluorescence, a Planktoscope - an imaging microscope to identify phytoplankton and small zooplankton, and along several sections at the eastern boundary a moving vessel profiler for the continuous measurements of temperature, salinity and chlorophyll fluorescence in the upper 25 m. A set of surface drifters (18 15-m SVP and 44 1-m HEREON drifters) and 4 Argo floats were deployed during the cruise as well. With regard to the original cruise proposal all proposed work was performed except underway measurements of CO_2, N_2O and CO that could not be carried out due to

technical problems on board and the usage of the infrared camera that was not available for installation in the CTD rosette.

Narrative

On Easter Sunday, April 17, 2022, R/V Meteor departed from the harbor of Cape Town, South Africa at about 18:00. The late departure was delayed by a few hours because of the late delivery of scientific equipment including instrumentation needed during our cruise. After the previous cruise this instrumentation had accidentally been packed into containers leaving for Germany and we were lucky that the containers had not yet been cleared by South African customs. All cruise participants arrived well in Cape Town and after an additional COVID-19 test in Cape Town were allowed to go onboard R/V Meteor. Luckily, all cruise participants stayed negative throughout the cruise. Our Angolan observer did not receive his passport with visa for Portugal in time and thus was not able to attend the cruise.

As we had allowance for measurements in the EEZ of South Africa, we switched on the underway measurements after leaving the port of Cape Town. Underway sampling included measurements of temperature, salinity, fluorescence intensity, upper ocean velocity and X-band radar measurements. Unfortunately, the planned underway measurements of trace gases could not be carried out due to a major failure of the trace gas analyzer. Despite various attempts (on-site and remotely), the problem could not be solved and therefore the system had to be disassembled. In order to still acquire information on surface concentrations of nitrous oxide (N_2O) in surface waters, discrete seawater samples were collected regularly (every 6 h) from the ship's seawater supply system (~2 m depth).

We also used the time to test the performance of the Longranger 75-kHz ADCP that was installed in the moon pool during the port stay in Cape Town. Typically, we are relying on the shipboard velocity measurements with the two Ocean Surveyors (75-kHz OS and 38-kHz OS) providing excellent data during previous cruises. Unfortunately, the 75-kHz OS instrument that provides higher vertical resolution data than the 38-kHz OS, failed during cruise M180 and could not be repaired in time. As our focus was on high-resolution velocity measurements near the surface, we decided to use a Longranger 75-kHz ADCPs that had to replace the 38-kHz OS that is normally in the ship's moon pool. Tests showed that the newly installed instrument delivers reliable data, particularly in the upper 250 m. The performance in the deeper layers is, however, reduced compared to the 75-kHz OS.

Measurements had to stop in the Namibian EEZ as we did not submit an application for measurements. The reason was that Namibian authorities required port stops in Namibia before and after a measurement program within the EEZ of Namibia for which no time was reserved in the cruise proposal. On April 21 at 13:00 UTC, we arrived at the EEZ of Angola, where we started our measurement program along the continental slope using the moving vessel profiler (MVP) measuring continuously between CTD station located on every full degree in latitude. On April 23 at 09:00 UTC, we arrived at the location of our long-term current-meter mooring off Angola. It has been maintained continuously since July 2013. The mooring was recovered without problems and redeployed during the next day. In between station work with CTD and microstructure probe was carried out. Additionally, a freely drifting surface buoy was deployed that measured temporal high-resolution velocity on the shelf for about 1.5 days. After the mooring deployment, we started continuous microstructure measurements close to the coast at 25 m water depth while the ship was heading in an offshore direction. The microstructure measurements were interrupted by regular CTD stations along our long-term hydrographic and velocity repeat section. After the recovery of the drift buoy in

the morning of April 25, CTD and microstructure station work continued along the section. Upon reaching the deep ocean with more than 2000 m water depth, we deployed a set of three Argo floats on behalf of the German Hydrographic Office (BSH) and recovered a special biogeochemical Argo float. The recovered Argo float had a UVP installed and was deployed about one year ago during R/V Sonne cruise SO283. Work along the 11°S section ended on April 26 at 15:00 UTC.

On the way toward the equator, we used the MVP to measure the near surface stratification associated with the run-off of the Congo River. Two additional CTD stations within the Congo plume and measurements with the drift buoy complemented the measurement program at the eastern boundary. Measurements were stopped, while passing the EEZs of the Democratic Republic of the Congo and Equatorial Guinea as we did not receive allowance for measurements by these countries.

On April 30 at 03:00 UTC, we arrived at the equator at 2°E just outside of the high-risk area for piracy defined by the German Federal Police Sea. There we started the main work along the trans-Atlantic equatorial section. Work at 2°E included a Zooplankton Multinet station, a CTD station, measurements with the spectroradiometer, MSS measurements and the deployment and recovery of the drift buoy including a 1200-kHz ADCP for near surface velocity shear measurements. Subsequently the station work along the equator was organized as follows: every degree in longitude we had our standard full depth CTD station followed by an MSS station. Additionally, every three degrees in longitude we had a multinet station and every five degrees we had an additional shallow CTD to fulfill the extended need for water samples together with an in-situ pump station for thorium probes. Along the equator we deployed 62 near-surface drifters and one Argo float. We had two different drifters on board, the standard SVP drifters, which drift with the water at 15 m depth and HEREON drifters measuring the velocity in the upper meter. Pairs of drifters were deployed about every 1° longitude between 7°W and 37°W with a reduced resolution toward east and west. The combined drifter data allow us - also in comparison to the surface velocity of the marina radar and the uppermost bin of the shipboard ADCP at about 17 m - to assess the vertical shear of the flow field close to the surface.

While the CTD and data transfer via the cable was very reliable throughout the whole cruise, we had to change the winch several times mostly due to spooling problems. As during the previous cruise, the CTD wire had broken and the attached CTD was lost, a new wire had been spooled onto the winch in the port of Cape Town. In general the new cable on winch #3 worked in general very well. However, after the deepest station (about 6000 m) in the Romanche Fracture Zone on May 8, the cable was not spooled evenly on the winch drum and we had to switch to winch #12. After some tests and re-spooling, the winches were changed a few times, but finally we decided to use winch #12 until the end of the measurement program. For the multinet and the in-situ pumps, we used throughout winch #2 throughout the cruise without any problems.

Approaching the western boundary starting at 38°W, we decreased the distance between stations to 30’ longitude and close to the continental slope we decreased it further down to 5’ longitude to capture the very narrow boundary currents. Almost at the end of the measurement program after the CTD station at 42°W on May 19 at 09:00 UTC, we noted cracks in the glass of the PISCO system on both sides with some water inside the instrument. The instrument had to be removed from the CTD rosette and was not operable anymore. The last CTD station on the equator at 44°15’W was finished on May 20 at 16:00 UTC. We continued the section along the equator until 44°45’W doing particularly underway velocity measurements to capture also the shallow part of the North Brazil Current. After finishing the equatorial section, we headed north-eastward toward the final destination, the port of Mindelo, Cape Verde.

On request of GEOMAR colleagues, we recovered on the way to Mindelo a drifting surface buoy that had become detached from its anchor about two months ago, a malfunctioning wave glider, and the underwater elements of the surface buoy that was still in place at its original mooring position close to the Cape Verdean Island of Santo Antão. We arrived in the port of Mindelo on May 27 at 17:00 UTC.

Acknowledgements

We are grateful to Detlef Korte and his crew for the excellent collaboration. The crew of R/V METEOR greatly contributed to the success of the cruise. The ship time of R/V METEOR was provided by the German Science Foundation (DFG) within the core program METEOR/MERIAN. Financial support was provided by the German Federal Ministry of Education and Research as part of the BANINO (03F0795A) project and by the EU H2020 under grant agreement 817578 TRIATLAS project.

List of Participants

Abbreviations: PO – Physical Oceanography, CO – Chemical Oceanography, BO – Biological Oceanography, ME – Meteorology, ADCP – acoustic Doppler current profiler, CTD – conductivity-temperature-depth measurements and water sampling, lADCP – lowered ADCP, vmADCP – vessel mounted ADCP, MSS – microstructure sonde, AZFP – acoustic zooplankton fish profiler, UVP – underwater vision profiler, PISCO – Plankton Imaging with Scanning Optics system, DOM/POM – dissolved/particulate organic matter.

No.	Name	Discipline	Institution
1	Brandt, Peter, Prof.	PO, chief scientist	GEOMAR
2	Bam, Wokil, Dr.	CO, thorium	WHOI
3	Czeschel, Rena, Dr.	PO, CTD, lADCP, vmADCPs	GEOMAR
4	Damke, Paula	PO, CTD, salinometer	GEOMAR
5	Deulofeu Capo, Ona	BO, DOM, POM, prokaryots	ICM
6	Dölger, Emma	CH, oxygen	GEOMAR
7	Fernández Carrera, Ana, Dr.	BO, nitrogen fixation, nutrients, C uptake	IOW
8	Gasser, Beat, Dr.	BO, thorium	IAEA
9	Gómez Letona, Markel	BO, DOM, POM, prokaryots	ULPGC
10	Hans, Anna Christina	PO, CTD, drifter, buoy	GEOMAR
11	Imbol Koungue, Rodrigue Anicet, Dr.	PO, CTD, mooring	GEOMAR
12	Jordan, Tine	BO, UVP, multinet, zooplankton	LOV/GEOMAR
13	Körner, Mareike	PO, CTD, microstructure, MVP	GEOMAR
14	Krahmann, Gerd, Dr.	PO, CTD, lADCP, salinometer	GEOMAR
15	Müller, Mario	PO, CTD, technique, MVP	GEOMAR
16	Navarro Ariza, Wendy Paola, Dr.	PO, marine radar, drifters	HEREON
17	Olbricht, Hannah	PO, CTD, technique, microstructure	GEOMAR
18	Prigent, Arthur, Dr.	PO, CTD, surface drifter	GEOMAR
19	Roch, Marisa	PO, CTD, salinometer	GEOMAR
20	Rupf, Franziska	PO, CTD, microstructure	GEOMAR
21	Sarmiento L., Airam Nauzet	BO, AZFP, Multinet	ULPGC
22	Schmidt, Ina	BO, nitrogen fixation, nutrients	IOW/GEOMAR
23	Steckhan, Luisa	CO, N_2O, underway trace gases	GEOMAR
24	Stelzner, Martin	ME, weather	DWD
25	Subramaniam, Ajit, Prof.	BO, bio-optics, phytoplankton	LDEO
26	Theileis, Anton	BO, technique, PISCO	GEOMAR
27	Witt, René	PO, CTD, technique, mooring	GEOMAR
28	Bittencourt, Liana Pacheco	Observer	Brazilian Navy

DWD	Deutscher Wetterdienst, Germany
GEOMAR	GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel, Germany
HEREON	Helmholtz-Zentrum Hereon, Geesthacht, Germany.
IAEA	International Atomic Energy Agency, Monaco, France.
ICM	Institute of Marine Sciences, CSIC, Barcelona, Spain
IOW	Leibniz-Institut für Ostseeforschung Warnemünde, Rostock, Germany.
LDEO	Lamont Doherty Earth Observatory at Columbia University, USA.
LOV	Laboratoire d'Océanographie de Villefranche, France.
ULPGC	University of Las Palmas de Gran Canaria, Spain.
WHOI	Woods Hole Oceanographic Institution, Woods Hole, USA.

Station No.		Date	Gear	Time	Latitude	Longitude	Water Depth	Remarks
METEOR (M181)	GEOMAR	2022		[UTC]	[°]	[°]	[m]	
1	MVP 1	21.04.	MVP	13:10-14:55	17°14.05‘S	011°16.54‘E		**MVP** test station and underway
2	CTD 1	21.04.	CTD	15:09-17:48	17°00.00‘S	011°11.00‘E	1250	**CTD** test station (to bottom), moored instrument calibration
3	DRIFT test	21.04.	Drift buoy	15:31-15:49	17°00.00‘S	011°11.00‘E		**Drift buoy** test during CTD station
4	MVP 2	21.04.	MVP	17:59-23:21	17°00.00‘S	011°11.00‘E		**MVP** underway
5	CTD 2	21.04.	CTD	23:57-00:16	16°00.00‘S	011°34.00‘E	869	**CTD** station (to bottom)
6	MVP 3	22.04.	MVP	00:31-06:09	16°00.00‘S	011°34.00‘E		**MVP** underway
7	CTD 3	22.04.	CTD	06:25-06:52	15°00.00‘S	012°04.00‘E	430	**CTD** station (to bottom)
8	MVP 4	22.04.	MVP	07:18-09:50	14°57.00‘S	012°04.00‘E		**MVP** underway
9	CTD 4	22.04.	CTD	12:37-13:07	14°00.00‘S	012°12.00‘E	496	**CTD** station (to bottom)
10	MSS 1	22.04.	MSS	13:17-13:56	14°00.00‘S	012°12.00‘E		**MSS** test station
11	CTD 5	22.04.	CTD	20:36-21:19	13°00.00‘S	012°43.00‘E	946	**CTD** station (to bottom)
12	KPO1235	23.04.	Mooring	09:16-10:43	10°50.00‘S	013°00.00‘E	1230	**Mooring** recovery
13	CTD 6	23.04.	CTD	11:12-12:17	10°50.00‘S	013°00.00‘E	1227	**CTD** station (to bottom)
14	RM 1	23.04.	Spectro-radio-meter	11:19-11:41	10°50.00‘S	013°00.00‘E		**RM** into the water during CTD station
15	MSS 2	23.04.	MSS	12:25-13:25	10°50.00‘S	013°00.00‘E		**MSS** station
16	DRIFT 1	23.04.	Drift buoy	15:54	10°36.00’S	013°21.00‘E		**Drift buoy** deployment
17	CTD 7	23.04.	CTD	16:10-15:24	10°36.00’S	013°21.00‘E	110	**CTD** station (to bottom)
18	MSS 3	23.04.	MSS	16:35-17:01	10°36.00’S	013°21.00‘E		**MSS** station
19	CTD 8	23.04.	CTD	17:40-17:57	10°38.00’S	013°18.00‘E	125	**CTD** station (to bottom)
20	MSS 4	23.04.	MSS	18:06-18:36	10°38.00’S	013°18.00‘E		**MSS** station
21	CTD 9	23.04.	CTD	19:18-19:40	10°40.00’S	013°15.00‘E	220	**CTD** station (to bottom)
22	MSS 5	23.04.	MSS	19:50-20:29	10°40.00’S	013°15.00‘E		**MSS** station
23	CTD 10	23.04.	CTD	21:19-21:50	10°42.00’S	013°12.00‘E	436	**CTD** station (to bottom)
24	MSS 6	23.04.	MSS	22:02-22:51	10°42.00’S	013°12.00‘E		**MSS** station
25	CTD 11	23.04.	CTD	23:29-00:16	10°44.00’S	013°09.00‘E	705	**CTD** station (to bottom)
26	MSS 7	24.04.	MSS	00:24-01:31	10°44.00’S	013°09.00‘E		**MSS** station
27	CTD 12	24.04.	CTD	02:05-03:05	10°46.00’S	013°06.00‘E	944	**CTD** station (to bottom)
28	MSS 8	24.04.	MSS	03:14-04:08	10°46.00’S	013°06.00‘E		**MSS** station
29	CTD 13	24.04.	CTD	04:49-05:49	10°48.00’S	013°03.00‘E	1160	**CTD** station (to bottom)
30	MSS 9	24.04.	MSS	05:57-06:40	10°48.00’S	013°03.00‘E		**MSS** station
31	KPO1246	24.04.	Mooring	08:34-10:23	10°50.00‘S	013°00.00‘E	1230	**Mooring** deployment
32	RM 2	24.04.	Spectro-radio-meter	15:02-15:14	10°28.00’S	013°33.00‘E		**RM** station

33	CTD 14	24.04.	CTD	15:22-15:32	10°28.00’S	013°33.00‘E	24	**CTD** station (to bottom)
34	MSS 10	24.04.	MSS	15:40-19:10	10°28.00’S	013°33.00‘E		**MSS** station
35	CTD 15	24.04.	CTD	19:28-19:41	10°30.00’S	013°30.00‘E	50	**CTD** station (to bottom)
36	MSS 11	24.04.	MSS	19:58-20:12	10°30.00’S	013°30.00‘E		**MSS** station, stopped with broken connection
37	MSS 12	24.04.	MSS	21:17-00:05	10°30.00’S	013°30.00‘E		**MSS** station
38	CTD 16	25.04.	CTD	00:22-00:35	10°32.00’S	013°27.00‘E	63	**CTD** station (to bottom)
39	MSS 13	25.04.	MSS	00:49-03:32	10°32.00’S	013°27.00‘E		**MSS** station
40	CTD 17	25.04.	CTD	03:58-04:13	10°34.00’S	013°24.00‘E	91	**CTD** station (to bottom)
41	MSS 14	25.04.	MSS	04:33-06:14	10°34.00’S	013°24.00‘E		**MSS** station to drift buoy
42	DRIFT 1	25.04.	Drift buoy	07:04	10°27.50’S	013°22.60‘E		**Drift buoy** recovery
					10°34.00’S	013°24.00‘E		ADCP section
43	KPO1248	25.04.	PIES	10:33	10°50.46‘S	013°00.25‘E	1224	**PIES** deployment
44	CTD 18	25.04.	CTD	11:34-12:41	10°55.00’S	012°52.50‘E	1260	**CTD** station (to bottom)
45	RM 3	25.04.	Spectro-radio-meter	11:43-12:00	10°55.00’S	012°52.50‘E		**RM** into the water during CTD station
46	MSS 15	25.04.	MSS	12:50-13:52	10°55.00’S	012°52.50‘E		**MSS** station
47	CTD 19	25.04.	CTD	14:49-16:20	11°00.00’S	012°45.00‘E	1432	**CTD** station (to bottom), moored instrument calibration
48	MSS 16	25.04.	MSS	16:32-17:11	11°00.00’S	012°45.00‘E		**MSS** station
49	CTD 20	25.04.	CTD	20:35-22:08	11°20.00’S	012°15.00‘E	2285	**CTD** station (to bottom)
50	MSN1	25.04.	MSN	22:24-01:14	11°20.00’S	012°15.00‘E		**Multinet** station
51	Argo 1	26.04.	Float	01:27	11°20.00’S	012°15.00‘E		**Argo float** deployment
52	CTD 21	26.04.	CTD	05:54-06:23	11°45.00’S	011°38.00‘E	3461	**CTD** station (to 150m)
53	Argo 2	26.04.	Float	06:32	11°45.00’S	011°38.00‘E		**Argo float** deployment
54	Argo 3	26.04.	Float	10:47-11:01	11°10.00’S	011°13.00‘E		**Argo float** recovery
55	CTD 22	26.04.	CTD	11:20-13:40	11°10.00’S	011°13.00‘E	3694	**CTD** station (to bottom)
56	RM 4	26.04.	Spectro-radio-meter	11:44-12:17	11°10.00’S	011°13.00‘E		**RM** into the water during CTD station
57	Argo 4	26.04.	Float	14:41	11°10.00’S	011°13.00‘E		**Argo float** deployment
58	MVP 5	27.04.	MVP	06:42-15:13	08°06.50’S-06°30.60’S	011°04.10’E-010°59.60‘E		**MVP** underway until EEZ of DRC
59	MVP 6	27.04.	MVP	17:16-18:10	06°09.20’S-06°00.00’S	010°57.50’E-010°58.00‘E		**MVP** underway after leaving EEZ of DRC
60	DRIFT 2	27.04.	Drift buoy	18:18	06°00.00’S	010°58.00‘E		**Drift buoy** deployment
61	CTD 23	27.04.	CTD	18:26-18:51	06°00.00’S	010°58.00‘E	1445	**CTD** station (200 m)
62	DRIFT 2	27.04.	Drift buoy	19:24	06°01.40’S	010°56.80‘E		**Drift buoy** recovery
63	MVP 7	27.04.	MVP	19:34-14:08	06°00.00’S-04°00.00’S	010°58.00’E-008°00.00‘E		**MVP** underway

64	DRIFT 3	28.04.	Drift buoy	14:08	04°00.00’S	008°00.00‘E		**Drift buoy** deployment
65	RM 5	28.04.	Spectro-radio-meter	14:18-14:34	04°00.00’S	008°00.00‘E		**RM** into the water before CTD station
66	CTD 24	28.04.	CTD	14:27-14:51	04°00.00’S	008°00.00‘E		**CTD** station (200 m)
67	DRIFT 3	28.04.	Drift buoy	15:03	04°00.00’S	008°00.00‘E		**Drift buoy** recovery
68	MVP 8	28.04.	MVP	15:17-20:42	04°00.00’S-03°25.20’S	008°00.00’E-007°07.80‘E		**MVP** underway until EEZ of EG
69	DRIFT 4	30.04.	Drift buoy	03:04	00°00.00’S	002°00.00‘E		**Drift buoy** deployment
70	MSN 2	30.04.	MSN	03:15-05:46	00°00.00’S	002°00.00‘E		**Multinet** station
71	CTD 25	30.04.	CTD	06:05-09:01	00°00.00’S	002°00.00‘E	4610	**CTD** station (to bottom)
72	RM 6	30.04.	Spectro-radio-meter	08:18-08:44	00°00.00’S	002°00.00‘E		**RM** into the water during CTD station
73	MSS 17	30.04.	MSS	09:14-09:44	00°00.00’S	002°00.00‘E		**MSS** station
74	DRIFT 4	30.04.	Drift buoy	10:45	00°00.00’S	002°00.00‘E		**Drift buoy** recovery
75	DRIFT 5	30.04.	Drift buoy	16:04	00°00.00’S	001°00.00‘E		**Drift buoy** deployment
76	CTD 26	30.04.	CTD	16:13-19:06	00°00.00’S	001°00.00‘E	4832	**CTD** station (to bottom)
77	RM 7	30.04.	Spectro-radio-meter	16:18-16:35	00°00.00’S	001°00.00’E		**RM** into the water during CTD station
78	ISP 1	30.04.	ISP	19:24-21:14	00°00.00’S	001°00.00‘E		**In situ pump** station
79	MSS 18	30.04.	MSS	21:21-21:45	00°00.00’S	001°00.00‘E		**MSS** station
80	DRIFT 5	30.04.	Drift buoy	22:40	00°00.00’S	001°00.00‘E		**Drift buoy** recovery
81	CTD 27	01.05.	CTD	04:21-04:43	00°00.00’S	000°00.00‘E		**CTD** station (to 200m)
82	MSS 19	01.05.	MSS	04:50-05:19	00°00.00’S	000°00.00‘E		**MSS** station
83	CTD 28	01.05.	CTD	05:38-09:09	00°00.00’S	000°00.00‘E	4935	**CTD** station (to bottom)
84	RM 8	01.05.	Spectro-radio-meter	08:42-08:54	00°00.00’S	000°00.00’W		**RM** into the water during CTD station
85	DRIFT 6	01.05.	Drift buoy	14:34	00°00.00’S	001°00.00’W		**Drift buoy** deployment
86	MSN 3	01.05.	MSN	14:39-15:31	00°00.00’S	001°00.00’W		**Multinet** station
87	CTD 29	01.05.	CTD	15:40-18:47	00°00.00’S	001°00.00’W	4996	**CTD** station (to bottom)
88	RM 9	01.05.	Spectro-radio-meter	16:11-16:33	00°00.00’S	001°00.00’W		**RM** into the water during CTD station
89	MSS 20	01.05.	MSS	18:58-19:25	00°00.00’S	001°00.00’W		**MSS** station
90	DRIFT 6	01.05.	Drift buoy	20:25	00°00.00’S	001°00.00‘W		**Drift buoy** recovery
91	CTD 30	02.05.	CTD	01:42-05:03	00°00.00’S	002°00.00’W	5053	**CTD** station (to bottom)
92	MSS 21	02.05.	MSS	05:18-05:52	00°00.00’S	002°00.00’W		**MSS** station
93	CTD 31	02.05.	CTD	13:49-17:03	00°00.00’S	003°00.00’W	5125	**CTD** station (to bottom)
94	RM 10	02.05.	Spectro-radio-meter	14:25-14:43	00°00.00’S	003°00.00’W		**RM** into the water during CTD station
95	MSS 22	02.05.	MSS	17:14-17:40	00°00.00’S	003°00.00‘W		**MSS** station

96	CTD 32	02.05.	CTD	22:55-02:03	00°00.00'S	004°00.00'W	5146	**CTD** station (to bottom)
97	MSN 4	03.05.	MSN	02:20-03:11	00°00.00'S	004°00.00'W		**Multinet** station
98	MSS 23	03.05.	MSS	03:19-03:50	00°00.00'S	004°00.00'W		**MSS** station
99	CTD 33	03.05.	CTD	09:15-09:38	00°00.00'S	005°00.00'W		**CTD** station (to 200m)
100	MSS 24	03.05.	MSS	09:48-10:12	00°00.00'S	005°00.00'W		**MSS** station
101	DRIFT 7	03.05.	Drift buoy	10:25-15:44	00°00.00'S	005°00.00'W		**Drift buoy** loosely tethered
102	CTD 34	03.05.	CTD	10:35-13:49	00°00.00'S	005°00.00'W	5159	**CTD** station (to bottom)
103	RM 11	03.05.	Spectro-radio-meter	11:12-11:32	00°00.00'S	005°00.00'W		**RM** into the water during CTD station
104	ISP 2	03.05.	ISP	14:01-15:54	00°00.00'S	005°00.00'W		**In situ pump** station
105	CTD 35	03.05.	CTD	21:32-00:37	00°00.00'S	006°00.00'W	5005	**CTD** station (to bottom)
106	MSS 25	04.05.	MSS	00:50-01:32	00°00.00'S	006°00.00'W		**MSS** station
107	CTD 36	04.05.	CTD	06:57-10:06	00°00.00'S	007°00.00'W	5147	**CTD** station (to bottom)
108	RM 12	04.05.	Spectro-radio-meter	09:24-09:46	00°00.00'S	007°00.00'W		**RM** into the water during CTD station
109	MSN 5	04.05.	MSN	10:18-11:06	00°00.00'S	007°00.00'W		**Multinet** station
110	MSS 26	04.05.	MSS	11:11-11:43	00°00.00'S	007°00.00'W		**MSS** station
111	DRIFT H1	04.05.	Surface drifter	11:46	00°00.00'S	007°00.00'W		**HEREON** drifter deployment
112	CTD 37	04.05.	CTD	17:05-20:12	00°00.00'S	008°00.00'W	5202	**CTD** station (to bottom)
113	MSS 27	04.05.	MSS	20:23-20:46	00°00.00'S	008°00.00'W		**MSS** station
114	DRIFT H2	04.05.	Surface drifter	20:42	00°00.00'S	008°00.00'W		**HEREON** drifter deployment
115	DRIFT S1	04.05.	Surface drifter	20:45	00°00.00'S	008°00.00'W		**SVP** drifter deployment
116	DRIFT H3	04.05.	Surface drifter	20:48	00°00.00'S	008°00.00'W		**HEREON** drifter deployment
117	CTD 38	05.05.	CTD	01:58-04:34	00°00.00'S	009°00.00'W	4372	**CTD** station (to bottom)
118	MSS 28	05.05.	MSS	04:46-05:17	00°00.00'S	009°00.00'W		**MSS** station
119	DRIFT H4	05.05.	Surface drifter	05:20	00°00.00'S	009°00.00'W		**HEREON** drifter deployment
120	DRIFT H5	05.05.	Surface drifter	10:12	00°00.50'N	009°51.40'W		**HEREON** drifter deployment
121	DRIFT S2	05.05.	Surface drifter	10:14	00°00.50'N	009°51.40'W		**SVP** drifter deployment
122	DRIFT H6	05.05.	Surface drifter	11:21	00°00.00'S	010°00.00'W		**HEREON** drifter deployment
123	DRIFT 8	05.05.	Drift buoy	11:30	00°00.00'S	010°00.00'W		**Drift buoy** deployment
124	CTD 39	05.05.	CTD	11:36-12:00	00°00.00'S	010°00.00'W		**CTD** station (to 200m)
125	MSN 6	05.05.	MSN	12:06-12:56	00°00.00'S	010°00.00'W		**Multinet** station
126	CTD 40	05.05.	CTD	13:14-16:14	00°00.00'S	010°00.00'W	4768	**CTD** station (to bottom)
127	RM 13	05.05.	Spectro-radio-meter	13:22-13:45	00°00.00'S	010°00.00'W		**RM** into the water during CTD station
128	ISP 3	05.05.	ISP	16:24-18:17	00°00.00'S	010°00.00'W		**In situ pump** station
129	MSS 29	05.05.	MSS	18:22-18:51	00°00.00'S	010°00.00'W		**MSS** station

130	DRIFT 8	05.05.	Drift buoy	20:25	00°00.00'S	010°00.00'W		**Drift buoy** recovery
131	CTD 41	06.05.	CTD	00:48-03:18	00°00.00'S	011°00.00'W	3855	**CTD** station (to bottom)
132	MSS 30	06.05.	MSS	03:29-03:59	00°00.00'S	011°00.00'W		**MSS** station
133	DRIFT H7	06.05.	Surface drifter	04:02	00°00.00'S	011°00.00'W		**HEREON** drifter deployment
134	CTD 42	06.05.	CTD	09:14-11:48	00°00.00'S	012°00.00'W	3942	**CTD** station (to bottom)
135	RM 14	06.05.	Spectro-radio-meter	10:42-11:03	00°00.00'S	012°00.00'W		**RM** into the water during CTD station
136	MSS 31	06.05.	MSS	11:56-12:24	00°00.00'S	012°00.00'W		**MSS** station
137	DRIFT H8	06.05.	Surface drifter	12:07	00°00.00'S	012°00.00'W		**HEREON** drifter deployment
138	DRIFT S3	06.05.	Surface drifter	12:09	00°00.00'S	012°00.00'W		**SVP** drifter deployment
139	DRIFT H9	06.05.	Surface drifter	12:11	00°00.00'S	012°00.00'W		**HEREON** drifter deployment
140	CTD 43	06.05.	CTD	17:42-20:20	00°00.00'S	013°00.00'W	4373	**CTD** station (to bottom)
141	MSN 7	06.05.	MSN	20:28-21:13	00°00.00'S	013°00.00'W		**Multinet** station
142	MSS 32	06.05.	MSS	21:16-21:40	00°00.00'S	013°00.00'W		**MSS** station
143	DRIFT H10	06.05.	Surface drifter	21:43	00°00.00'S	013°00.00'W		**HEREON** drifter deployment
144	DRIFT S4	06.05.	Surface drifter	21:45	00°00.00'S	013°00.00'W		**SVP** drifter deployment
145	DRIFT H11	06.05.	Surface drifter	21:46	00°00.00'S	013°00.00'W		**HEREON** drifter deployment
146	CTD 44	07.05.	CTD	03:03-05:25	00°00.00'S	014°00.00'W	3830	**CTD** station (to bottom)
147	MSS 33	07.05.	MSS	05:36-06:05	00°00.00'S	014°00.00'W		**MSS** station
148	DRIFT H12	07.05.	Surface drifter	06:18	00°00.00'S	014°00.00'W		**HEREON** drifter deployment
149	DRIFT H13	07.05.	Surface drifter	11:36	00°00.00'S	015°00.00'W		**HEREON** drifter deployment
150	DRIFT S5	07.05.	Surface drifter	11:37	00°00.00'S	015°00.00'W		**SVP** drifter deployment
151	DRIFT H14	07.05.	Surface drifter	11:38	00°00.00'S	015°00.00'W		**HEREON** drifter deployment
152	DRIFT 9	07.05.	Drift buoy	11:42	00°00.00'S	015°00.00'W		**Drift buoy** deployment
153	CTD 45	07.05.	CTD	11:51-12:15	00°00.00'S	015°00.00'W		**CTD** station (to 200m)
154	ISP 4	07.05.	ISP	12:22-14:18	00°00.00'S	015°00.00'W		**In situ pump** station
155	RM 15	07.05.	Spectro-radio-meter	14:18-14:31	00°00.00'S	015°00.00'W		**RM** station
156	CTD 46	07.05.	CTD	14:37-16:56	00°00.00'S	015°00.00'W	3778	**CTD** station (to bottom)
157	MSS 34	07.05.	MSS	17:04-17:36	00°00.00'S	015°00.00'W		**MSS** station
158	Argo 5	07.05.	Float	17:10	00°00.00'S	015°00.00'W		**Argo float** deployment
159	DRIFT 9	07.05.	Drift buoy	18:50	00°00.00'S	015°00.00'W		**Drift buoy** recovery
160	CTD 47	08.05.	CTD	23:44-01:49	00°00.00'S	016°00.00'W	3315	**CTD** station (to bottom)
161	MSS 35	08.05.	MSS	01:58-02:30	00°00.00'S	016°00.00'W		**MSS** station
162	DRIFT H15	08.05.	Surface drifter	02:32	00°00.00'S	016°00.00'W		**HEREON** drifter deployment

163	DRIFT S6	08.05.	Surface drifter	02:33	00°00.00'S	016°00.00'W		**SVP** drifter deployment
164	DRIFT H16	08.05.	Surface drifter	02:33	00°00.00'S	016°00.00'W		**HEREON** drifter deployment
165	CTD 48	08.05.	CTD	08:11-11:18	00°00.00'S	017°00.00'W	5078	**CTD** station (to bottom)
166	RM 16	08.05.	Spectro-radio-meter	10:32-10:49	00°00.00'S	017°00.00'W		**RM** into the water during CTD station
167	MSN 8	08.05.	MSN	11:29-12:16	00°00.00'S	017°00.00'W		**Multinet** station
168	MSS 36	08.05.	MSS	12:22-13:00	00°00.00'S	017°00.00'W		**MSS** station
169	DRIFT H17	08.05.	Surface drifter	12:33	00°00.00'S	017°00.00'W		**HEREON** drifter deployment
170	CTD 49	08.05.	CTD	18:44-22:29	00°00.00'S	018°03.00'W	6005	**CTD** station (to bottom); water depth should be no deeper than 6000m
171	MSS 37	08.05.	MSS	22:47-23:25	00°00.00'S	018°03.00'W		**MSS** station
172	DRIFT H18	08.05.	Surface drifter	23:00	00°00.00'S	018°03.00'W		**HEREON** drifter deployment
173	DRIFT S7	08.05.	Surface drifter	23:02	00°00.00'S	018°03.00'W		**SVP** drifter deployment
174	DRIFT H19	08.05.	Surface drifter	23:03	00°00.00'S	018°03.00'W		**HEREON** drifter deployment
175	CTD 50	09.05.	CTD	04:42-07:34	00°00.00'S	019°00.00'W	4324	**CTD** station (to bottom)
176	MSS 38	09.05.	MSS	07:44-08:11	00°00.00'S	019°00.00'W		**MSS** station
177	DRIFT H20	09.05.	Surface drifter	08:16	00°00.00'S	019°00.00'W		**HEREON** drifter deployment
178	DRIFT H21	09.05.	Surface drifter	13:41	00°00.00'S	020°00.00'W		**HEREON** drifter deployment
179	DRIFT S8	09.05.	Surface drifter	13:41	00°00.00'S	020°00.00'W		**SVP** drifter deployment
180	DRIFT H22	09.05.	Surface drifter	13:02	00°00.00'S	020°00.00'W		**HEREON** drifter deployment
181	DRIFT 10	09.05.	Drift buoy	13:50	00°00.00'S	020°00.00'W		**Drift buoy** deployment
182	CTD 51	09.05.	CTD	14:10-14:34	00°00.00'S	020°00.00'W		**CTD** station (to 200m)
183	MSN 9	09.05.	MSN	14:45-15:33	00°00.00'S	020°00.00'W		**Multinet** station
184	RM 17	09.05.	Spectro-radio-meter	15:33-15:45	00°00.00'S	020°00.00'W		**RM** station
185	CTD 52	09.05.	CTD	15:50-17:25	00°00.00'S	020°00.00'W	2553	**CTD** station (to bottom)
186	ISP 5	09.05.	ISP	17:32-19:45	00°00.00'S	020°00.00'W		**In situ pump** station
187	MSS 39	09.05.	MSS	19:54-20:23	00°00.00'S	020°00.00'W		**MSS** station
188	DRIFT 10	09.05.	Drift buoy	21:13	00°00.00'S	020°00.00'W		**Drift buoy** recovery
189	CTD 53	10.05.	CTD	02:24-05:21	00°00.00'S	021°00.00'W	5125	**CTD** station (to bottom)
190	MSS 40	10.05.	MSS	05:32-06:01	00°00.00'S	021°00.00'W		**MSS** station
191	DRIFT H23	10.05.	Surface drifter	06:05	00°00.00'S	021°00.00'W		**HEREON** drifter deployment
192	DRIFT S9	10.05.	Surface drifter	06:05	00°00.00'S	021°00.00'W		**SVP** drifter deployment
193	DRIFT H24	10.05.	Surface drifter	06:06	00°00.00'S	021°00.00'W		**HEREON** drifter deployment
194	CTD 54	10.05.	CTD	13:43-16:09	00°00.00'S	022°00.00'W	4154	**CTD** station (to bottom)

195	RM 18	10.05.	Spectro-radio-meter	14:15-14:24 16:09-16:19	00°00.00'S	022°00.00'W		**RM** into the water during and after CTD station
196	MSS 41	10.05.	MSS	16:23-17:04	00°00.00'S	022°00.00'W		**MSS** station
197	DRIFT H25	10.05.	Surface drifter	16:42	00°00.00'S	022°00.00'W		**HEREON** drifter deployment
198	DRIFT S10	10.05.	Surface drifter	16:43	00°00.00'S	022°00.00'W		**SVP** drifter deployment
199	DRIFT H26	10.05.	Surface drifter	16:44	00°00.00'S	022°00.00'W		**HEREON** drifter deployment
200	CTD 55	10.05.	CTD	23:28-01:50	00°00.00'S	023°03.40'W	3912	**CTD** station (to bottom)
201	MSN 10	11.05.	MSN	02:05-02:55	00°00.00'S	023°03.40'W		**Multinet** station
202	MSS 42	11.05.	MSS	02:58-03:23	00°00.00'S	023°03.40'W		**MSS** station
203	DRIFT H27	11.05.	Surface drifter	03:25	00°00.00'S	023°03.40'W		**HEREON** drifter deployment
204	CTD 56	11.05.	CTD	08:26-10:42	00°00.00'S	024°00.00'W	3262	**CTD** station (to bottom)
205	MSS 43	11.05.	MSS	10:52-11:11	00°00.00'S	024°00.00'W		**MSS** station
206	DRIFT H28	11.05.	Surface drifter	11:13	00°00.00'S	024°00.00'W		**HEREON** drifter deployment
207	DRIFT S11	11.05.	Surface drifter	11:14	00°00.00'S	024°00.00'W		**SVP** drifter deployment
208	DRIFT H29	11.05.	Surface drifter	11:14	00°00.00'S	024°00.00'W		**HEREON** drifter deployment
209	RM 19	11.05.	Spectro-radio-meter	11:17-11:28	00°00.00'S	024°00.00'W		**RM** station
210	DRIFT 11	11.05.	Drift buoy	16:54	00°00.00'S	025°00.00'W		**Drift buoy** deployment
211	DRIFT H30	11.05.	Surface drifter	16:56	00°00.00'S	025°00.00'W		**HEREON** drifter deployment
212	MSN 11	11.05.	MSN	17:00-17:50	00°00.00'S	025°00.00'W		**Multinet** station
213	RM 20	11.05.	Spectro-radio-meter	17:14-17:31	00°00.00'S	025°00.00'W		**RM** station during MSN station
214	CTD 57	11.05.	CTD	18:01-20:31	00°00.00'S	025°00.00'W		**CTD** station (to 1000m); 6 calibration stops for AZFP á 15 min, moored instrument calibration
215	ISP 6	11.05.	ISP	20:41-22:46	00°00.00'S	025°00.00'W		**In situ pump** station
216	CTD 58	11.05.	CTD	23:02-00:53	00°00.00'S	025°00.00'W	3206	**CTD** station (to bottom)
217	MSN 12	12.05.	MSN	01:03-01:53	00°00.00'S	025°00.00'W		**Multinet** station
218	MSS 44	12.05.	MSS	01:57-02:32	00°00.00'S	025°00.00'W		**MSS** station
219	DRIFT 11	12.05.	Drift buoy	03:21	00°00.00'S	025°00.00'W		**Drift buoy** recovery
220	CTD 59	12.05.	CTD	08:36-10:41	00°00.00'S	026°00.00'W	3698	**CTD** station (to bottom)
221	RM 21	12.05.	Spectro-radio-meter	10:22-10:37	00°00.00'S	026°00.00'W		**RM** station during CTD station
222	RM 22	12.05.	Spectro-radio-meter	10:46-10:56	00°00.00'S	026°00.00'W		**RM** station
223	MSS 45	12.05.	MSS	10:59-11:18	00°00.00'S	026°00.00'W		**MSS** station
224	DRIFT H31	12.05.	Surface drifter	11:20	00°00.00'S	026°00.00'W		**HEREON** drifter deployment

225	DRIFT S12	12.05.	Surface drifter	11:21	00°00.00'S	026°00.00'W		**SVP** drifter deployment
226	DRIFT H32	12.05.	Surface drifter	11:22	00°00.00'S	026°00.00'W		**HEREON** drifter deployment
227	CTD 60	12.05.	CTD	16:55-18:48	00°00.00'S	027°00.00'W	3323	**CTD** station (to bottom)
228	RM 23	12.05.	Spectro-radio-meter	17:37-17:55	00°00.00'S	027°00.00'W		**RM** into the water during CTD station
229	MSS 46	12.05.	MSS	18:55-19:22	00°00.00'S	027°00.00'W		**MSS** station
230	DRIFT H33	12.05.	Surface drifter	19:06	00°00.00'S	027°00.00'W		**HEREON** drifter deployment
231	DRIFT S13	12.05.	Surface drifter	19:08	00°00.00'S	027°00.00'W		**SVP** drifter deployment
232	DRIFT H34	12.05.	Surface drifter	19:09	00°00.00'S	027°00.00'W		**HEREON** drifter deployment
233	CTD 61	13.05.	CTD	01:08-03:29	00°00.00'S	028°00.00'W	3950	**CTD** station (to bottom)
234	MSN 13	13.05.	MSN	03:40-04:30	00°00.00'S	028°00.00'W		**Multinet** station
235	MSS 47	13.05.	MSS	04:34-05:02	00°00.00'S	028°00.00'W		**MSS** station
236	DRIFT H35	13.05.	Surface drifter	04:43	00°00.00'S	028°00.00'W		**HEREON** drifter deployment
237	DRIFT S14	13.05.	Surface drifter	04:47	00°00.00'S	028°00.00'W		**SVP** drifter deployment
238	CTD 62	13.05.	CTD	11:05-13:25	00°00.00'S	029°00.00'W	3536	**CTD** station (to bottom); APA do Arquipélago de São Pedro e São Paulo
239	RM 24	13.05.	Spectro-radio-meter	11:52-12:09	00°00.00'S	029°00.00'W		**RM** into the water during CTD station
240	MSS 48	13.05.	MSS	13:34-14:00	00°00.00'S	029°00.00'W		**MSS** station
241	CTD 63	13.05.	CTD	20:13-20:37	00°00.00'S	030°00.00'W		**CTD** station (to 200m); APA do Arquipélago de São Pedro e São Paulo
242	ISP 7	13.05.	ISP	20:47-22:52	00°00.00'S	030°00.00'W		**In situ pump** station
243	CTD 64	13.05.	CTD	23:01-01:33	00°00.00'S	030°00.00'W	3854	**CTD** station (to bottom)
244	MSS 49	14.05.	MSS	01:46-02:11	00°00.00'S	030°00.00'W		**MSS** station
245	CTD 65	14.05.	CTD	08:18-10:55	00°00.00'S	031°00.00'W	4235	**CTD** station (to bottom)
246	MSN 14	14.05.	MSN	11:04-11:51	00°00.00'S	031°00.00'W		**Multinet** station
247	RM 25	14.05.	Spectro-radio-meter	11:15-11:35	00°00.00'S	031°00.00'W		**RM** into the water during MSN station
248	MSS 50	14.05.	MSS	11:58-12:18	00°00.00'S	031°00.00'W		**MSS** station
249	DRIFT H36	14.05.	Surface drifter	12:19	00°00.00'S	031°00.00'W		**HEREON** drifter deployment
250	DRIFT S15	14.05.	Surface drifter	12:20	00°00.00'S	031°00.00'W		**SVP** drifter deployment
251	RM 26	14.05.	Spectro-radio-meter	18:18-18:36	00°00.00'S	032°00.00'W		**RM** station
252	CTD 66	14.05.	CTD	18:38-21:35	00°00.00'S	032°00.00'W	4282	**CTD** station (to bottom)
253	MSS 51	14.05.	MSS	21:45-22:07	00°00.00'S	032°00.00'W		**MSS** station
254	DRIFT H37	14.05.	Surface drifter	22:08	00°00.00'S	032°00.00'W		**HEREON** drifter deployment

255	CTD 67	15.05.	CTD	04:10-06:44	00°00.00'S	033°00.00'W	4545	**CTD** station (to bottom)
256	MSS 52	15.05.	MSS	06:59-07:30	00°00.00'S	033°00.00'W		**MSS** station
257	DRIFT H38	15.05.	Surface drifter	07:01	00°00.00'S	033°00.00'W		**HEREON** drifter deployment
258	DRIFT S16	15.05.	Surface drifter	07:02	00°00.00'S	033°00.00'W		**SVP** drifter deployment
259	DRIFT H39	15.05.	Surface drifter	07:03	00°00.00'S	033°00.00'W		**HEREON** drifter deployment
260	RM 27	15.05.	Spectro-radio-meter	13:33-13:47	00°00.00'S	034°00.00'W		**RM** station
261	CTD 68	15.05.	CTD	13:52-16:30	00°00.00'S	034°00.00'W	4563	**CTD** station (to bottom)
262	MSN 15	15.05.	MSN	16:37-17:25	00°00.00'S	034°00.00'W		**Multinet** station
263	MSS 53	15.05.	MSS	17:29-17:52	00°00.00'S	034°00.00'W		**MSS** station
264	DRIFT H40	15.05.	Surface drifter	17:37	00°00.00'S	034°00.00'W		**HEREON** drifter deployment
265	CTD 69	16.05.	CTD	00:06-00:33	00°00.00'S	035°00.00'W		**CTD** station (to 200m)
266	ISP 8	16.05.	ISP	00:43-02:45	00°00.00'S	035°00.00'W		**In situ pump** station
267	CTD 70	16.05.	CTD	02:57-05:34	00°00.00'S	035°00.00'W	4549	**CTD** station (to bottom)
268	MSS 54	16.05.	MSS	05:43-06:09	00°00.00'S	035°00.00'W		**MSS** station
269	DRIFT H41	16.05.	Surface drifter	05:50	00°00.00'S	035°00.00'W		**HEREON** drifter deployment
270	DRIFT S17	16.05.	Surface drifter	05:55	00°00.00'S	035°00.00'W		**SVP** drifter deployment
271	DRIFT H42	16.05.	Surface drifter	05:57	00°00.00'S	035°00.00'W		**HEREON** drifter deployment
272	CTD 71	16.05.	CTD	12:14-14:52	00°00.00'S	036°00.00'W	4532	**CTD** station (to bottom)
273	RM 28	16.05.	Spectro-radio-meter	12:55-13:10	00°00.00'S	036°00.00'W		**RM** into the water during CTD station
274	MSS 55	16.05.	MSS	15:00-15:27	00°00.00'S	036°00.00'W		**MSS** station
275	DRIFT H43	16.05.	Surface drifter	15:06	00°00.00'S	036°00.00'W		**HEREON** drifter deployment
276	CTD 72	16.05.	CTD	21:30-00:10	00°00.00'S	037°00.00'W	4516	**CTD** station (to bottom)
277	MSN 16	17.05.	MSN	00:19-00:49	00°00.00'S	037°00.00'W		**Multinet** station
278	MSS 56	17.05.	MSS	01:16-01:38	00°00.00'S	037°00.00'W		**MSS** station
279	DRIFT H44	17.05.	Surface drifter	01:27	00°00.00'S	037°00.00'W		**HEREON** drifter deployment
280	DRIFT S18	17.05.	Surface drifter	01:39	00°00.00'S	037°00.00'W		**SVP** drifter deployment
281	CTD 73	17.05.	CTD	07:42-10:12	00°00.00'S	038°00.00'W	4451	**CTD** station (to bottom)
282	MSS 57	17.05.	MSS	10:19-10:40	00°00.00'S	038°00.00'W		**MSS** station
283	CTD 74	17.05.	CTD	13:48-16:25	00°00.00'S	038°30.00'W	4379	**CTD** station (to bottom)
284	RM 29	17.05.	Spectro-radio-meter	14:31-14:46	00°00.00'S	038°30.00'W		**RM** into the water during CTD station
285	CTD 75	17.05.	CTD	19:24-21:52	00°00.00'S	039°00.00'W	4319	**CTD** station (to bottom)
286	MSS 58	17.05.	MSS	22:02-22:23	00°00.00'S	039°00.00'W		**MSS** station
287	CTD 76	18.05.	CTD	02:24-03:24	00°00.00'S	039°30.00'W	4199	**CTD** station (to bottom)

288	CTD 77	18.05.	CTD	06:25-06:47	00°00.00'S	040°00.00'W		**CTD** station (to 200m)
289	ISP 9	18.05.	ISP	06:58-08:54	00°00.00'S	040°00.00'W		**In situ pump** station
290	CTD 78	18.05.	CTD	09:05-11:06	00°00.00'S	040°00.00'W	3472	**CTD** station (to bottom)
291	MSN 17	18.05.	MSN	11:13-12:01	00°00.00'S	040°00.00'W		**Multinet** station
292	RM 30	18.05.	Spectro-radio-meter	11:45-12:02	00°00.00'S	040°00.00'W		**RM** into the water during MSN station
293	MSS 59	18.05.	MSS	12:06-12:28	00°00.00'S	040°00.00'W		**MSS** station
294	CTD 79	18.05.	CTD	15:08-17:19	00°00.00'S	040°30.00'W	3901	**CTD** station (to bottom)
295	CTD 80	18.05.	CTD	19:58-22:16	00°00.00'S	041°00.00'W	3824	**CTD** station (to bottom)
296	MSS 60	18.05.	MSS	22:28-22:46	00°00.00'S	041°00.00'W		**MSS** station
297	CTD 81	19.05.	CTD	01:26-03:41	00°00.00'S	041°30.00'W	3902	**CTD** station (to bottom)
298	CTD 82	19.05.	CTD	06:22-08:35	00°00.00'S	042°00.00'W	3866	**CTD** station (to bottom)
299	MSS 61	19.05.	MSS	08:44-09:08	00°00.00'S	042°00.00'W		**MSS** station
300	CTD 83	19.05.	CTD	11:50-14:03	00°00.00'S	042°30.00'W	3693	**CTD** station (to bottom)
301	RM 31	19.05.	Spectro-radio-meter	14:06-14:19	00°00.00'S	042°30.00'W		**RM** station
302	MSN 18	19.05.	MSN	16:41-17:29	00°00.00'S	043°00.00'W		**Multinet** station
303	CTD 84	19.05.	CTD	17:36-19:27	00°00.00'S	043°00.00'W	3136	**CTD** station (to bottom)
304	MSS 62	19.05.	MSS	19:35-20:04	00°00.00'S	043°00.00'W		**MSS** station
305	CTD 85	19.05.	CTD	22:25-00:22	00°00.00'S	043°30.00'W	3472	**CTD** station (to bottom)
306	CTD 86	20.05.	CTD	01:40-03:35	00°00.00'S	043°45.00'W	3254	**CTD** station (to bottom)
307	CTD 87	20.05.	CTD	04:33-06:36	00°00.00'S	043°55.00'W	3100	**CTD** station (to bottom)
308	ISP 10	20.05.	ISP	07:05-09:07	00°00.00'S	044°00.00'W		**In situ pump** station
309	CTD 88	20.05.	CTD	09:38-11:30	00°00.00'S	044°00.00'W	3058	**CTD** station (to bottom)
310	MSS 63	20.05.	MSS	11:38-11:57	00°00.00'S	044°00.00'W		**MSS** station
311	CTD 89	20.05.	CTD	13:03-14:42	00°00.00'S	044°05.00'W	2654	**CTD** station (to bottom)
312	RM 32	20.05.	Spectro-radio-meter	14:45-14:58	00°00.00'S	044°05.00'W		**RM** station
313	CTD 90	20.05.	CTD	15:45-16:58	00°00.00'S	044°10.00'W	1990	**CTD** station (to bottom)
314	CTD 91	20.05.	CTD	17:40-18:28	00°00.00'S	044°15.00'W	1221	**CTD** station (to bottom)
					00°00.00'S	044°45.00'W		**ADCP section**
315	KPO1247	22.05.	Mooring	19:19-19:39	07°33.32'N	041°08.32'W		**Surface Buoy** recovery
316	GEOMAR 4	23.05.	WVGL	17:29	08°27.60'N	037°16.60'W		**Wave Glider** recovery
317	RM 33	23.05.	Spectro-radio-meter	17:37-17:49	08°27.60'N	037°16.60'W		**RM** station
318	RM 34	24.05.	Spectro-radio-meter	16:31-16:46	11°01.39'N	034°00.17'W		**RM** station
319	KPO1247	27.05.	Mooring	08:45-09:51	17°11.23'N	025°36.27'W	193	**Mooring** recovery