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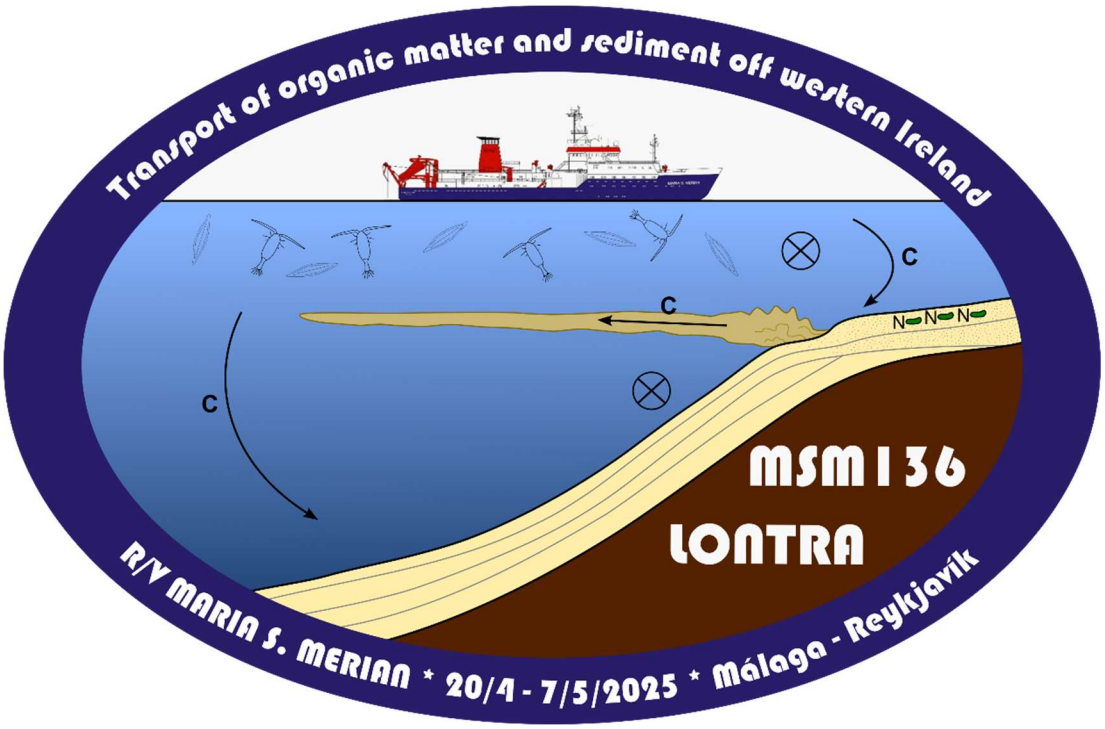
Short Cruise Report
Maria S. Merian MSM136

Málaga, Spain – Reykjavík, Iceland
19/04/2025 – 07/05/2025
Chief Scientist: Elda Miramontes
Captain: Klaus Bergmann



LONTRA – Along- and across-slope transport of organic matter and sediment off western Ireland

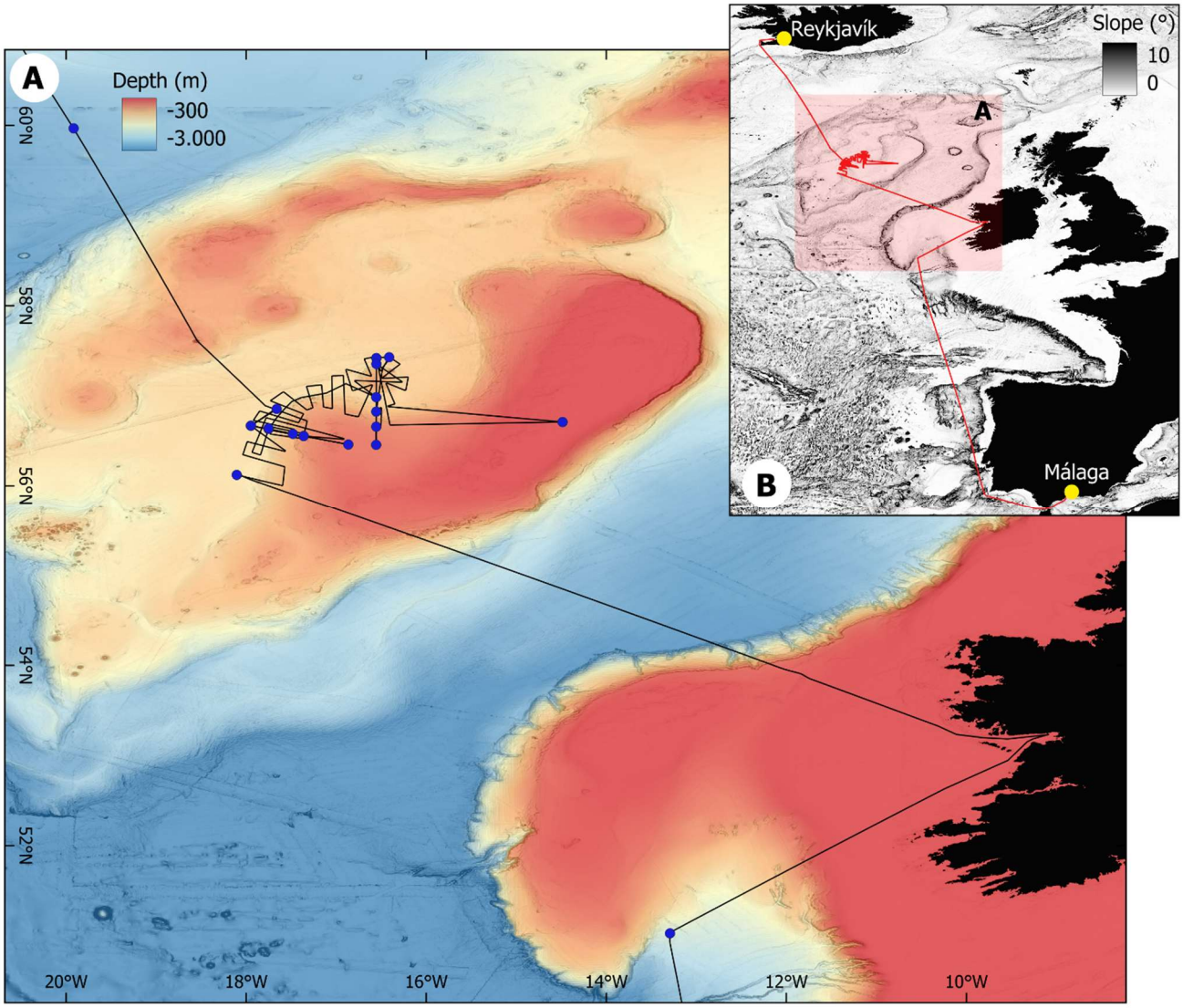


Fig. 1: A) Bathymetric map showing the cruise track (black lines) and stations (blue dots) of MSM136; B) complete cruise track (red lines) from Málaga to Reykjavík. The location of A is shown in B with a red rectangle.

Objectives

The aim of the MSM136 cruise onboard the R/V Maria S. Merian was to investigate the across- and alongslope transport and burial of sediment, organic matter and microplastics. It aligns with the aim of the Research Unit RECEIVER of the Cluster of Excellence “The Ocean Floor – Earth’s Uncharted Interface”, which are to advance our understanding of the transfer of matter to the ocean floor with respect to the formation, transformation, transportation, degradation, and preservation of biogenic particles within the water column and at the ocean floor. Furthermore, the results of this cruise contribute to the first two overarching objectives of the Cluster of Excellence, which are to understand the processes that transform the properties and fluxes of biogenic particles on their transit to the ocean floor under changing climate conditions and to quantify fluxes of carbon and other elements to and across the ocean floor. The results of this cruise will improve our ability to estimate the budgets of these fluxes in the Earth system.

With this cruise, we aim to analyse the processes that control the along- and across-slope transport of particles, with a special focus on the role of bottom currents in sediment resuspension, offshore transport and erosion at the seafloor. A further objective is to gain crucial insights into key aspects that control the transformation of organic matter, notably particulate and dissolved organic components such as polysaccharides, pigments and lipids, and the influence of this transformation on environmental proxy signals. Moreover, we want to track the particulate organic matter and dissolved organic matter composition changes during the offshore transport via isotopic, radiocarbon, and molecular composition analyses. We further study the baseline diversity of important groups of organisms (microbes versus zooplankton) that are responsible for depth-specific transformation processes and also investigated the potential role of parasites in mediating aggregate formation/composition and influencing transport rates. We also study the biogeochemical cycling that occurs within the permeable shelf sediments in order to determine the fate and transformation of organic matter produced in the shallow sunlit waters of the continental shelf.

Narrative

On the 19th of April, a team of 21 scientists from the MARUM-Center for Marine Environmental Sciences (University of Bremen), the Alfred Wegener Institute and the Max Planck Institute for Marine Microbiology and 1 artist from the University of the Arts Bremen, boarded the research vessel Maria S. Merian in the harbour of Málaga (Spain). This cruise was the third one of the MARUM Cluster of Excellence “The Ocean Floor - Earth’s Uncharted Interface” that took place in 2025 onboard the R/V Maria S. Merian and that focused on the study of the transport of organic matter in the ocean.

In addition to the scientific team and the crew of the vessel, a technician from the UK Met Office joined the cruise from the 19th until the 24th of April 2025 in order to repair a meteorological buoy off the west of Ireland that had been out of service for several months. On the 23rd of April 2025, we reached the location of the buoy, which was put on deck by the crew and successfully repaired by the UK Met Office technician. Afterwards the buoy was redeployed at the same location and we headed towards Galway, Ireland. On the 24th of April, the UK Met Office technician disembarked in Galway and a researcher and observer from the University College Cork, Ireland, embarked to join the scientific team.

The original plan of the MSM136 cruise was to investigate the lateral transport of organic matter off NW Ireland, from the Irish continental shelf to the deep part of the Rockall Trough. However, despite having obtained the diplomatic permit for research, we could not obtain a permit in time from the Ireland's Maritime Area Regulatory Authority and we could thus not carry out our research in Irish waters. Fortunately, we could find an alternative site in international waters on the Rockall Bank. We reached the study area on the 25th of April 2025 and we had 9 days of successful data collection and deployments. We continuously performed hydroacoustic surveys (multibeam and PARASOUND acquisitions) to recognise the type of sediment deposits and identify layers with high amount of particles in the water column, extending a total length of 2658 km. Our mapping and sampling efforts focused on the northwestern slope of the Rockall Bank and Hatton Trough. The multibeam bathymetry collected in the main study area covers a surface of ~10.000 km^2 (Fig. 2). The main types of sedimentary deposits and structures that we could identify are contourites (deposits formed by ocean currents), submarine landslides, pockmarks (depressions formed by fluid seepage) and cold-water coral mounds.

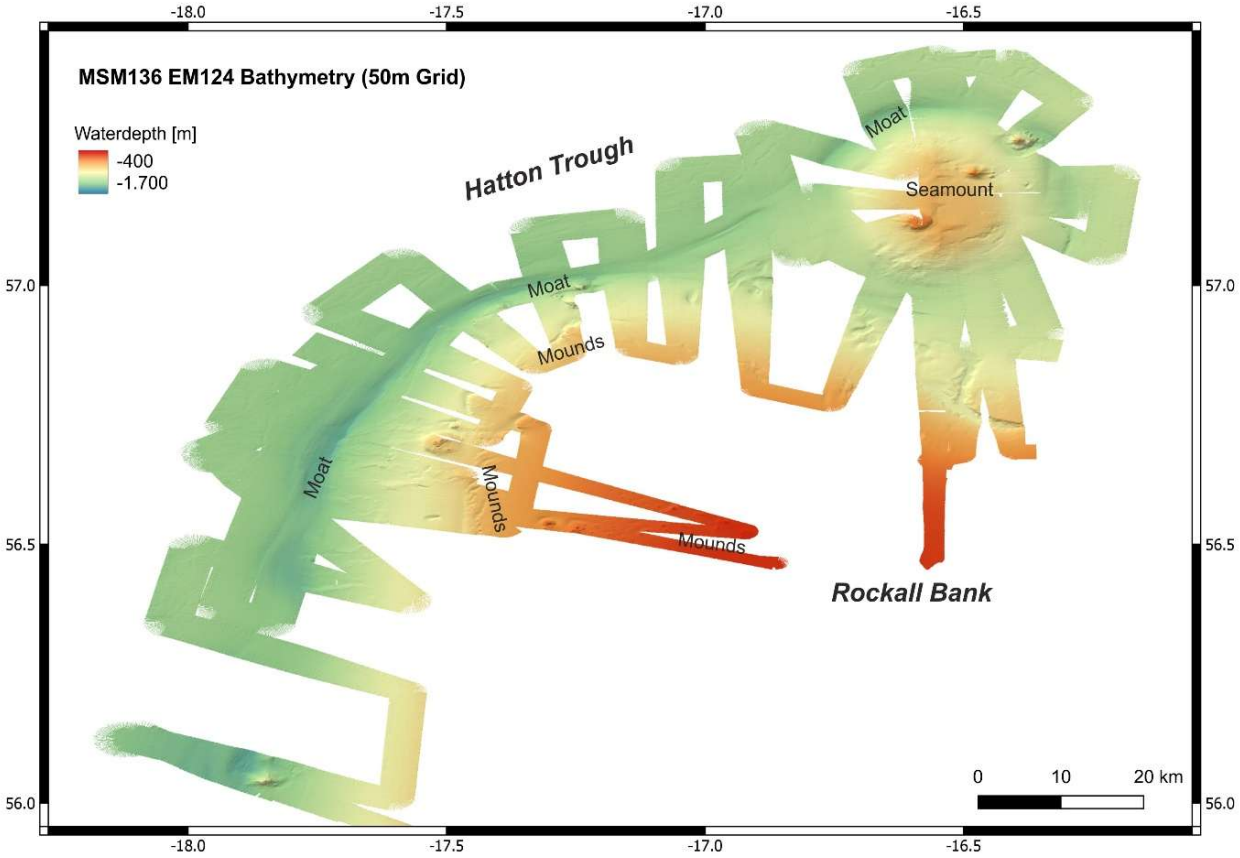


Fig. 2: Multibeam bathymetry (EM124) of the study area.

We also measured continuously current velocity using two vessel-mounted Acoustic Doppler Current Profilers (ADCP OS38 and OS75) and surface water properties (temperature, salinity, chlorophyll and turbidity). We performed in total 14 stations, in which we used a wide range of instruments. We deployed during about 8 days a mooring in a moat at the foot of the slope and a lander on the middle slope to investigate particle dynamics near the seafloor. The sub-surface mooring was 155 m long, measured every 1 min near-bed current velocity with a downward looking ADCP (80 m above the seafloor), temperature, salinity and turbidity (30 m above the seafloor, but stopped recording after 1 day due to technical problems) and collected particles with a sediment trap (20 m above the seafloor) every 12 hours.

A wide range of methods were used to analyse the origin and abundance of organic matter in the water column and to decipher its pathways to the seafloor. They were carried out along two main transects across the western slope of the Rockall Bank. At all the stations, we collected water samples and measured the properties of the water column using a CTD-rosette, including temperature, salinity, fluorescence, turbidity and oxygen measurements. We collected particles of the water column in 6 stations with in situ pumps, in 2 stations with drifting traps (deployed during 1 day) and in 4 with marine snow catchers. Phyto- and zooplankton were also collected using a hand net. Surface sediments were collected in 13 stations using a multicorer and in 2 stations with a van Veen grab. Surface sediments were mainly muddy in the deepest part of the slope and sandy on the upper slope.

On the 5th of May, we finished the data collection and we headed towards Iceland. On the way, we mapped in the Hatton Bank a previously unknown seamount as part of the pilot study SEAMAP “Targeted underway bathymetry for mapping unchartered seamounts”. In the morning of the 7th of May, we arrived at our final destination in the harbour of Reykjavik.

Acknowledgements

We thank the captain Klaus Bergmann and the crew for their support and expertise, and for creating a very friendly atmosphere on board. Major financial support was provided by the German Research Foundation (DFG) via the German Research Fleet Coordination Centre, Universität Hamburg, as well as from the DFG Cluster of Excellence “The Ocean Floor—Earth's Uncharted Interface” (EXC-2077-390741603). We also thank the MARUM – Center for Marine Environmental Sciences, University of Bremen, Alfred Wegener Institute for Polar and Marine Research, Max Planck Institute for Marine Microbiology, the University of the Arts Bremen and the University College Cork for their participation in the cruise and support.

Cruise participants

	Name	Discipline	Institution	Time
1	Elda Miramontes	Sedimentology / *Chief Scientist*	MARUM / GeoB	19/04-07/05/25
2	Tilmann Schwenk	Hydroacoustics	GeoB	19/04-07/05/25
3	Pauline Cornard	Hydroacoustics / Sedimentology	MARUM / GeoB	19/04-07/05/25
4	Felix Butschek	Observer / Hydroacoustics	UCC	24/04-07/05/25
5	Alice Lefebvre	Sediment dynamics	MARUM	19/04-07/05/25
6	Brit Kockisch	Sedimentology	MARUM / GeoB	19/04-07/05/25
7	Ling Wang	Sedimentology	MARUM / GeoB	19/04-07/05/25
8	Linda Biehler	Polysaccharides	MARUM / MPI	19/04-07/05/25
9	Sofie Niggemeier	Polysaccharides	MPI	19/04-07/05/25
10	Aman Akeerath Mundanatt	Polysaccharides	MARUM /MPI	19/04-07/05/25
11	Alexandra Kraberg	Phytoplankton	AWI	19/04-07/05/25
12	Hannah Marchant	Nitrogen cycling	MARUM	19/04-07/05/25
13	Morten Iversen	Particle flux	AWI / MARUM	19/04-07/05/25
14	Julia Pamphile Dos Santos	Pelagic biogeochemistry	MARUM / MPI	19/04-07/05/25
15	Sandra Murawski	Pelagic biogeochemistry	AWI	19/04-07/05/25
16	Runa Reuter	In situ optics, aggregates	MARUM / AWI	19/04-07/05/25
17	Anja Seebeck	Pelagic biogeochemistry	AWI	19/04-07/05/25
18	Bingbing Wei	Organic geochemistry	AWI	19/04-07/05/25
19	Esther Lüdtke	Organic geochemistry	AWI	19/04-07/05/25
20	Julian Seelinger	Technical support	MARUM / GeoB	19/04-07/05/25
21	Marco Klann	Technical support / logistics	MARUM	19/04-07/05/25
22	Carolin Melia Brendel	Media	MARUM / HFK	19/04-07/05/25
23	Alexander Collins	Marine systems engineering	UK Metoffice	19/04-24/04/25

Institutions

MARUM	Centre for Marine Environmental Sciences, University of Bremen (Germany)
GeoB	Faculty of Geosciences, University of Bremen (Germany)
UCC	University College Cork (Ireland)
AWI	Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (Germany)
MPI	Max Planck Institute for Marine Microbiology (Germany)
HFK	University of the Arts Bremen

Station List

Table 1: Table detailing the stations and devices deployed during MSM136. CTD: conductivity, temperature, depth; LADCP: lowered acoustic Doppler current profiler; UVP: underwater vision profiler; NET: hand plankton net; DF: drifting trap; ISP: in situ pump; MSC: marine snow catcher; MUC: multi corer; MOOR: mooring; VGRAB: van Veen grab.

Ship number	Station number	Device	Action	Date and time (UTC)	Latitude (°)	Longitude (°)	Water depth (m)
MSM136_1-1	UKMO K2	Buoy	recovered	23/04/2025 13:46	51.028377	-13.294081	3489
MSM136_1-1	UKMO K2	Buoy	deployed	23/04/2025 17:51	51.028311	-13.2944	3489
MSM136_2-1	GeoB26701-1	CTD, LADCP, UVP	in the water	25/04/2025 20:04	56.124299	-18.105508	1388
MSM136_2-1	GeoB26701-1	CTD, LADCP, UVP	max. depth	25/04/2025 20:35	56.124277	-18.105491	1386
MSM136_2-1	GeoB26701-1	CTD, LADCP, UVP	on deck	25/04/2025 21:15	56.124289	-18.105486	1385
MSM136_2-2	GeoB26701-2	NET	in the water	25/04/2025 20:05	56.124313	-18.10551	1387
MSM136_2-2	GeoB26701-2	NET	on deck	25/04/2025 20:09	56.124286	-18.105499	1387
MSM136_3-1	GeoB26702-1	CTD, LADCP, UVP	in the water	26/04/2025 09:34	56.669846	-17.94958	1331
MSM136_3-1	GeoB26702-1	CTD, LADCP, UVP	max. depth	26/04/2025 09:48	56.669832	-17.949591	1330
MSM136_3-1	GeoB26702-1	CTD, LADCP, UVP	on deck	26/04/2025 10:10	56.66982	-17.949572	1331
MSM136_3-2	GeoB26702-2	NET	in the water	26/04/2025 09:37	56.669852	-17.949616	1329
MSM136_3-3	GeoB26702-2	NET	on deck	26/04/2025 09:43	56.669833	-17.949586	1332
MSM136_3-4	GeoB26702-3	CTD, LADCP, UVP	in the water	26/04/2025 11:15	56.669839	-17.949607	1331
MSM136_3-4	GeoB26702-3	CTD, LADCP, UVP	max. depth	26/04/2025 11:48	56.669822	-17.949586	1330
MSM136_3-4	GeoB26702-3	CTD, LADCP, UVP	on deck	26/04/2025 12:24	56.669823	-17.94962	1331
MSM136_3-5	GeoB26702-4	DF	deployed	26/04/2025 13:31	56.669734	-17.94668	1331
MSM136_3-5	GeoB26702-4	DF	recovered	27/04/2025 14:00	56.85551	-17.661973	1368
MSM136_7-1	GeoB26702-5	ISP	in the water	27/04/2025 16:09	56.668946	-17.948809	1332
MSM136_7-1	GeoB26702-5	ISP	max. depth	27/04/2025 16:38	56.668941	-17.948821	1330
MSM136_7-1	GeoB26702-5	ISP	on deck	27/04/2025 19:33	56.668931	-17.948773	1330
MSM136_7-2	GeoB26702-6	MSC	in the water	27/04/2025 19:54	56.668943	-17.948799	1330
MSM136_7-2	GeoB26702-6	MSC	max. depth	27/04/2025 19:56	56.668931	-17.948799	1330
MSM136_7-2	GeoB26702-6	MSC	on deck	27/04/2025 20:03	56.668932	-17.948783	1331
MSM136_7-3	GeoB26702-7	MUC	in the water	27/04/2025 20:16	56.668925	-17.948774	1332
MSM136_7-3	GeoB26702-7	MUC	on ground	27/04/2025 20:46	56.668937	-17.9488	1330
MSM136_7-3	GeoB26702-7	MUC	on deck	27/04/2025 21:35	56.66894	-17.948785	1329
MSM136_4-1	GeoB26703-1	MOOR	deployed	26/04/2025 15:45	56.633912	-17.752914	1457
MSM136_4-1	GeoB26703-1	MOOR	recovered	04/05/2025 12:54	56.643199	-17.719996	0
MSM136_8-1	GeoB26703-2	CTD, LADCP, UVP	in the water	27/04/2025 23:28	56.641961	-17.752032	1455
MSM136_8-1	GeoB26703-2	CTD, LADCP, UVP	max. depth	28/04/2025 00:00	56.641917	-17.752023	1456
MSM136_8-1	GeoB26703-2	CTD, LADCP, UVP	on deck	28/04/2025 00:46	56.641912	-17.752037	1455
MSM136_8-2	GeoB26703-3	NET	in the water	27/04/2025 23:32	56.641902	-17.752011	1457
MSM136_8-2	GeoB26703-3	NET	on deck	28/04/2025 00:12	56.641912	-17.752009	1455
MSM136_8-3	GeoB26703-4	ISP	in the water	28/04/2025 01:01	56.641913	-17.751993	1457
MSM136_8-3	GeoB26703-4	ISP	max. depth	28/04/2025 01:35	56.641906	-17.751981	1456
MSM136_8-3	GeoB26703-4	ISP	on deck	28/04/2025 04:34	56.641908	-17.752014	1458
MSM136_8-4	GeoB26703-5	MUC	in the water	28/04/2025 04:46	56.641914	-17.752036	1457
MSM136_8-4	GeoB26703-5	MUC	on ground	28/04/2025 05:19	56.641923	-17.752038	1459
MSM136_8-4	GeoB26703-5	MUC	on deck	28/04/2025 06:13	56.642187	-17.751476	1460
MSM136_5-1	GeoB26704-1	LANDER	deployed	26/04/2025 17:46	56.555905	-17.362938	757
MSM136_5-1	GeoB26704-1	LANDER	recovered	04/05/2025 08:32	56.556054	-17.366171	0
MSM136_5-4	GeoB26704-1	LANDER	recovered	04/05/2025 08:32	56.555669	-17.361943	755
MSM136_5-4	GeoB26704-2	CTD, LADCP, UVP	in the water	26/04/2025 17:56	56.555675	-17.361959	754
MSM136_5-4	GeoB26704-2	CTD, LADCP, UVP	max depth	26/04/2025 18:02	56.555648	-17.36191	755
MSM136_5-3	GeoB26704-2	CTD, LADCP, UVP	on deck	26/04/2025 18:04	56.555645	-17.361916	755
MSM136_5-3	GeoB26704-3	NET	in the water	26/04/2025 18:10	56.555659	-17.361895	756
MSM136_5-3	GeoB26704-3	NET	on deck	26/04/2025 18:13	56.555659	-17.361895	756
MSM136_5-4	GeoB26704-4	MSC	in the water	26/04/2025 18:31	56.555669	-17.361943	755
MSM136_5-4	GeoB26704-4	MSC	max depth	26/04/2025 18:53	56.555675	-17.361959	754

Ship number	Station number	Device	Action	Date and time (UTC)	Latitude (°)	Longitude (°)	Water depth (m)
MSM136_5-4	GeoB26704-4	MSC	on deck	26/04/2025 19:20	56.555648	-17.36191	755
MSM136_5-5	GeoB26704-5	MSC	in the water	26/04/2025 19:41	56.555683	-17.36191	754
MSM136_5-6	GeoB26704-5	MSC	max depth	26/04/2025 19:44	56.555672	-17.361892	755
MSM136_5-6	GeoB26704-5	MSC	on deck	26/04/2025 19:51	56.555657	-17.361914	755
MSM136_5-7	GeoB26704-6	ISP	in the water	26/04/2025 20:45	56.555646	-17.361911	755
MSM136_5-7	GeoB26704-6	ISP	max. depth	26/04/2025 21:08	56.555673	-17.361946	754
MSM136_5-7	GeoB26704-6	ISP	on deck	26/04/2025 23:32	56.555654	-17.361917	753
MSM136_5-8	GeoB26704-7	MUC	in the water	26/04/2025 23:48	56.555657	-17.361879	752
MSM136_5-8	GeoB26704-7	MUC	on ground	27/04/2025 00:04	56.555606	-17.361912	753
MSM136_5-8	GeoB26704-7	MUC	on deck	27/04/2025 00:32	56.555528	-17.361785	751
MSM136_18-1	GeoB26704-8	CTD, LADCP, UVP	in the water	04/05/2025 05:58	56.556034	-17.363034	753
MSM136_18-1	GeoB26704-8	CTD, LADPC, UVP	max. depth	04/05/2025 06:22	56.556032	-17.363031	753
MSM136_18-1	GeoB26704-8	CTD, LADCP, UVP	on deck	04/05/2025 07:06	56.556028	-17.363031	754
MSM136_18-2	GeoB26704-9	MSC	in the water	04/05/2025 07:30	56.556028	-17.363027	754
MSM136_18-2	GeoB26704-9	MSC	Max. depth	04/05/2025 07:32	56.556036	-17.363029	754
MSM136_18-2	GeoB26704-9	MSC	on deck	04/05/2025 07:35	56.556035	-17.363035	753
MSM136_18-3	Geob26704-10	MSC	in the water	04/05/2025 07:48	56.556038	-17.363031	754
MSM136_18-3	Geob26704-10	MSC	max. depth	04/05/2025 07:49	56.55603	-17.363031	757
MSM136_18-3	Geob26704-10	MSC	on deck	04/05/2025 07:52	56.556037	-17.363032	0
MSM136_19-1	GeoB26704-11	Yoyo CTD, LADPC, UVP	in the water	04/05/2025 15:14	56.555997	-17.362813	754
MSM136_19-1	GeoB26704-11	Yoyo CTD, LADPC, UVP	on deck	05/05/2025 02:54	57.049817	-17.953693	1291
MSM136_6-1	GeoB26705-1	CTD, LADCP, UVP	in the water	27/04/2025 03:12	56.460962	-16.866372	529
MSM136_6-1	GeoB26705-1	CTD, LADCP, UVP	max. depth	27/04/2025 03:34	56.460924	-16.866329	528
MSM136_6-1	GeoB26705-1	CTD, LADCP, UVP	on deck	27/04/2025 03:59	56.460957	-16.866373	527
MSM136_6-2	GeoB26705-2	NET	in the water	27/04/2025 03:18	56.460921	-16.866346	529
MSM136_6-2	GeoB26705-2	NET	on deck	27/04/2025 03:37	56.460924	-16.866333	530
MSM136_6-3	GeoB26705-3	MUC	in the water	27/04/2025 04:07	56.460942	-16.866371	529
MSM136_6-3	GeoB26705-3	MUC	information	27/04/2025 04:21	56.460932	-16.866377	529
MSM136_6-3	GeoB26705-3	MUC	on deck	27/04/2025 04:41	56.46093	-16.866337	529
MSM136_6-4	GeoB26705-4	VGRAB	in the water	27/04/2025 04:58	56.46095	-16.866375	529
MSM136_6-4	GeoB26705-4	VGRAB	on ground	27/04/2025 05:18	56.460955	-16.866377	529
MSM136_6-4	GeoB26705-4	VGRAB	on deck	27/04/2025 05:38	56.460959	-16.866393	529
MSM136_6-5	GeoB26705-5	VGRAB	in the water	27/04/2025 05:41	56.46095	-16.866362	529
MSM136_6-5	GeoB26705-5	VGRAB	on ground	27/04/2025 05:57	56.460931	-16.866362	528
MSM136_6-5	GeoB26705-5	VGRAB	on deck	27/04/2025 06:15	56.460936	-16.866375	529
MSM136_9-1	GeoB26706-1	CTD, LADCP, UVP	in the water	28/04/2025 07:54	56.57939	-17.482001	954
MSM136_9-1	GeoB26706-1	CTD, LADCP, UVP	max. depth	28/04/2025 08:04	56.57938	-17.482013	955
MSM136_9-1	GeoB26706-1	CTD, LADCP, UVP	on deck	28/04/2025 08:13	56.579365	-17.482005	953
MSM136_9-2	GeoB26706-2	NET	in the water	28/04/2025 07:59	56.579375	-17.482013	955
MSM136_9-2	GeoB26706-2	NET	on deck	28/04/2025 08:01	56.57937	-17.482014	952
MSM136_9-3	GeoB26706-3	NET	in the water	28/04/2025 08:04	56.579369	-17.481986	953
MSM136_9-3	GeoB26706-3	NET	on deck	28/04/2025 08:07	56.579399	-17.482016	953
MSM136_9-4	GeoB26706-4	NET	in the water	28/04/2025 08:26	56.579363	-17.482006	953
MSM136_9-4	GeoB26706-4	NET	on deck	28/04/2025 08:29	56.579382	-17.482017	953
MSM136_9-5	GeoB26706-5	NET	in the water	28/04/2025 08:29	56.579383	-17.482026	958
MSM136_9-5	GeoB26706-5	NET	on deck	28/04/2025 08:31	56.579375	-17.482009	955
MSM136_9-6	GeoB26706-6	CTD, LADCP, UVP	in the water	28/04/2025 08:50	56.579381	-17.482018	953
MSM136_9-6	GeoB26706-6	CTD, LADCP, UVP	max. depth	28/04/2025 09:18	56.579371	-17.482014	953
MSM136_9-6	GeoB26706-6	CTD, LADCP, UVP	on deck	28/04/2025 09:49	56.579374	-17.48201	951
MSM136_9-7	GeoB26706-7	MUC	in the water	28/04/2025 09:54	56.579387	-17.482006	952
MSM136_9-7	GeoB26706-7	MUC	on ground	28/04/2025 10:16	56.579373	-17.482011	953
MSM136_9-7	GeoB26706-7	MUC	on deck	28/04/2025 10:48	56.579372	-17.482003	952
MSM136_10-1	GeoB26707-1	CTD, LADCP, UVP	in the water	30/04/2025 11:39	56.710864	-14.486949	194
MSM136_10-1	GeoB26707-1	CTD, LADCP, UVP	max. depth	30/04/2025 11:52	56.710865	-14.486963	194
MSM136_10-1	GeoB26707-1	CTD, LADCP, UVP	on deck	30/04/2025 12:06	56.710861	-14.486959	193
MSM136_10-2	GeoB26707-2	NET	in the water	30/04/2025 11:44	56.710864	-14.486968	194

Ship number	Station number	Device	Action	Date and time (UTC)	Latitude (°)	Longitude (°)	Water depth (m)
MSM136_10-2	GeoB26707-2	NET	on deck	30/04/2025 11:47	56.710871	-14.486963	194
MSM136_10-3	GeoB26707-3	MUC	in the water	30/04/2025 12:12	56.71086	-14.486966	195
MSM136_10-3	GeoB26707-3	MUC	on ground	30/04/2025 12:18	56.71086	-14.486941	194
MSM136_10-3	GeoB26707-3	MUC	on deck	30/04/2025 12:28	56.710861	-14.486941	194
MSM136_10-4	GeoB26707-4	VGRAB	in the water	30/04/2025 13:12	56.710866	-14.486963	194
MSM136_10-4	GeoB26707-4	VGRAB	on deck	30/04/2025 13:29	56.710861	-14.486959	195
MSM136_10-5	GeoB26707-5	MUC	in the water	30/04/2025 14:19	56.710932	-14.487092	193
MSM136_10-5	GeoB26707-5	MUC	on ground	30/04/2025 14:25	56.710919	-14.487087	194
MSM136_10-5	GeoB26707-5	MUC	on deck	30/04/2025 14:34	56.710926	-14.487087	194
MSM136_11-1	GeoB26708-1	CTD	in the water	01/05/2025 03:34	57.420011	-16.554553	1238
MSM136_11-1	GeoB26708-1	CTD	max. depth	01/05/2025 03:45	57.420024	-16.554596	1239
MSM136_11-1	GeoB26708-1	CTD	on deck	01/05/2025 04:06	57.420023	-16.554609	1236
MSM136_11-2	GeoB26708-2	NET	in the water	01/05/2025 04:24	57.420009	-16.554599	1237
MSM136_11-2	GeoB26708-2	NET	on deck	01/05/2025 04:26	57.419992	-16.554607	1238
MSM136_11-3	GeoB26708-3	CTD, LADCP, UVP	in the water	01/05/2025 04:52	57.420014	-16.5546	1240
MSM136_11-3	GeoB26708-3	CTD, LADCP, UVP	max. depth	01/05/2025 05:22	57.420017	-16.554579	1240
MSM136_11-3	GeoB26708-3	CTD, LADCP, UVP	on deck	01/05/2025 05:54	57.420014	-16.554544	1241
MSM136_11-4	GeoB26708-4	NET	in the water	01/05/2025 05:03	57.420036	-16.554548	1241
MSM136_11-4	GeoB26708-4	NET	on deck	01/05/2025 05:04	57.420036	-16.554602	1238
MSM136_11-5	GeoB26708-5	DF	deployed	01/05/2025 08:36	57.419832	-16.554354	1239
MSM136_11-5	GeoB26708-5	DF	recovered	02/05/2025 09:25	57.429834	-16.413066	1226
MSM136_15-1	GeoB26708-6	ISP	in the water	02/05/2025 10:27	57.420854	-16.554069	1242
MSM136_15-1	GeoB26708-6	ISP	max. depth	02/05/2025 11:02	57.420844	-16.554094	1239
MSM136_15-1	GeoB26708-6	ISP	on deck	02/05/2025 13:50	57.420868	-16.554096	1240
MSM136_15-2	GeoB26708-7	MUC	in the water	02/05/2025 14:04	57.420669	-16.554107	1241
MSM136_15-2	GeoB26708-7	MUC	on ground	02/05/2025 14:34	57.420682	-16.554095	1240
MSM136_15-2	GeoB26708-7	MUC	on deck	02/05/2025 15:15	57.420691	-16.554084	1239
MSM136_12-1	GeoB26709-1	CTD, LADCP, UVP	in the water	01/05/2025 16:30	56.457864	-16.55691	545
MSM136_12-1	GeoB26709-1	CTD, LADCP, UVP	max. depth	01/05/2025 16:47	56.457874	-16.556929	544
MSM136_12-1	GeoB26709-1	CTD, LADCP, UVP	on deck	01/05/2025 17:09	56.45788	-16.556927	543
MSM136_12-2	GeoB26709-2	NET	in the water	01/05/2025 16:39	56.45788	-16.556906	545
MSM136_12-2	GeoB26709-2	NET	on deck	01/05/2025 16:41	56.457891	-16.556937	546
MSM136_12-3	GeoB26709-3	MSC	in the water	01/05/2025 17:28	56.457886	-16.556948	545
MSM136_12-3	GeoB26709-3	MSC	max. depth	01/05/2025 17:29	56.457904	-16.556912	544
MSM136_12-3	GeoB26709-3	MSC	on deck	01/05/2025 17:34	56.457894	-16.556872	544
MSM136_12-4	GeoB26709-4	MSC	in the water	01/05/2025 17:43	56.457869	-16.556891	544
MSM136_12-4	GeoB26709-4	MSC	max. depth	01/05/2025 17:45	56.457892	-16.556954	545
MSM136_12-4	GeoB26709-4	MSC	on deck	01/05/2025 17:47	56.457883	-16.556923	542
MSM136_12-5	GeoB26709-5	MUC	in the water	01/05/2025 17:58	56.45789	-16.556941	544
MSM136_12-5	GeoB26709-5	MUC	on ground	01/05/2025 18:12	56.457893	-16.55689	545
MSM136_12-5	GeoB26709-5	MUC	on deck	01/05/2025 18:32	56.4579	-16.55695	543
MSM136_13-1	GeoB26710-1	CTD, LADCP, UVP	in the water	01/05/2025 20:32	56.658888	-16.555639	674
MSM136_13-1	GeoB26710-1	CTD, LADCP, UVP	max. depth	01/05/2025 20:49	56.65893	-16.555641	674
MSM136_13-1	GeoB26710-1	CTD, LADCP, UVP	on deck	01/05/2025 21:12	56.658921	-16.55565	674
MSM136_13-2	GeoB26710-2	NET	in the water	01/05/2025 20:38	56.65894	-16.555632	675
MSM136_13-2	GeoB26710-2	NET	on deck	01/05/2025 20:40	56.658919	-16.555596	674
MSM136_13-3	GeoB26710-3	MUC	in the water	01/05/2025 21:19	56.658908	-16.555636	675
MSM136_13-3	GeoB26710-3	MUC	on ground	01/05/2025 21:34	56.658913	-16.555652	674
MSM136_13-3	GeoB26710-3	MUC	on deck	01/05/2025 22:00	56.658914	-16.55563	676
MSM136_13-4	GeoB26710-4	MUC	in the water	01/05/2025 22:27	56.658895	-16.555667	674
MSM136_13-4	GeoB26710-4	MUC	on ground	01/05/2025 22:42	56.658909	-16.555655	675
MSM136_13-4	GeoB26710-4	MUC	on deck	01/05/2025 23:09	56.65893	-16.555607	671
MSM136_14-1	GeoB26711-1	CTD, LADCP, UVP	in the water	02/05/2025 01:35	56.825933	-16.55578	1022
MSM136_14-1	GeoB26711-1	CTD, LADCP, UVP	max. depth	02/05/2025 02:00	56.825908	-16.5558	1023
MSM136_14-1	GeoB26711-1	CTD, LADCP, UVP	on deck	02/05/2025 02:34	56.825896	-16.555828	1020
MSM136_14-2	GeoB26711-2	NET	in the water	02/05/2025 01:38	56.825923	-16.555812	1023
MSM136_14-2	GeoB26711-2	NET	on deck	02/05/2025 01:40	56.825935	-16.555794	1022
MSM136_14-3	GeoB26711-3	NET	in the water	02/05/2025 02:00	56.825929	-16.555766	1022
MSM136_14-3	GeoB26711-3	NET	on deck	02/05/2025 02:01	56.825899	-16.555773	1023
MSM136_14-4	GeoB26711-4	MUC	in the water	02/05/2025 02:41	56.825813	-16.555874	1021
MSM136_14-4	GeoB26711-4	MUC	on ground	02/05/2025 03:05	56.825816	-16.555847	1022

Ship number	Station number	Device	Action	Date and time (UTC)	Latitude (°)	Longitude (°)	Water depth (m)
MSM136_14-4	GeoB26711-4	MUC	on deck	02/05/2025 03:42	56.825837	-16.555838	1023
MSM136_16-1	GeoB26712-1	CTD, LADCP, UVP	in the water	02/05/2025 16:11	57.355166	-16.554289	1334
MSM136_16-1	GeoB26712-1	CTD, LADCP, UVP	max. depth	02/05/2025 16:39	57.355001	-16.554498	1334
MSM136_16-1	GeoB26712-1	CTD, LADCP, UVP	on deck	02/05/2025 17:14	57.354998	-16.554511	1334
MSM136_16-2	GeoB26712-2	NET	in the water	02/05/2025 16:19	57.354993	-16.554511	1335
MSM136_16-2	GeoB26712-2	NET	on deck	02/05/2025 16:21	57.354997	-16.554483	1334
MSM136_16-3	GeoB26712-3	NET	in the water	02/05/2025 16:23	57.354988	-16.554475	1334
MSM136_16-3	GeoB26712-3	NET	on deck	02/05/2025 16:26	57.354986	-16.554463	1333
MSM136_16-4	GeoB26712-4	ISP	in the water	02/05/2025 17:32	57.355	-16.554498	1334
MSM136_16-4	GeoB26712-4	ISP	max. depth	02/05/2025 18:01	57.354988	-16.554487	1334
MSM136_16-4	GeoB26712-4	ISP	on deck	02/05/2025 20:50	57.354987	-16.554491	1337
MSM136_16-5	GeoB26712-5	MUC	in the water	02/05/2025 20:58	57.354985	-16.554488	1336
MSM136_16-5	GeoB26712-5	MUC	on ground	02/05/2025 21:27	57.354991	-16.55449	1337
MSM136_16-5	GeoB26712-5	MUC	on deck	02/05/2025 22:15	57.354996	-16.554495	1336
MSM136_17-1	GeoB26713-1	CTD, LADCP, UVP	in the water	03/05/2025 04:48	56.986108	-16.556177	1238
MSM136_17-1	GeoB26713-1	CTD, LADCP, UVP	max. depth	03/05/2025 05:15	56.9861	-16.556156	1238
MSM136_17-1	GeoB26713-1	CTD, LADCP, UVP	on deck	03/05/2025 05:52	56.986107	-16.556173	1239
MSM136_17-2	GeoB26713-2	NET	in the water	03/05/2025 05:20	56.986092	-16.55616	1238
MSM136_17-2	GeoB26713-2	NET	on deck	03/05/2025 05:22	56.986108	-16.556178	1239
MSM136_17-3	GeoB26713-3	ISP	in the water	03/05/2025 06:05	56.986135	-16.556101	1239
MSM136_17-3	GeoB26713-3	ISP	max. depth	03/05/2025 06:37	56.986097	-16.556107	1237
MSM136_17-3	GeoB26713-3	ISP	on deck	03/05/2025 09:21	56.98609	-16.556119	1242
MSM136_17-4	GeoB26713-4	MUC	in the water	03/05/2025 09:48	56.986083	-16.556116	1239
MSM136_17-4	GeoB26713-4	MUC	on ground	03/05/2025 10:16	56.986083	-16.556087	1240
MSM136_17-4	GeoB26713-4	MUC	on deck	03/05/2025 11:02	56.986083	-16.556111	1242
MSM136_20-1	GeoB26714-1	CTD, LADCP, UVP	in the water	06/05/2025 02:14	59.968529	-19.916909	2724
MSM136_20-1	GeoB26714-1	CTD, LADCP, UVP	max. depth	06/05/2025 03:07	59.968513	-19.916721	2723
MSM136_20-1	GeoB26714-1	CTD, LADCP, UVP	on deck	06/05/2025 03:58	59.968474	-19.916546	2723