

NOTIFICATION OF PROPOSED RESEARCH CRUISE

Part A: GENERAL

1. Name of research ship: **R.V. MARIA S. MERIAN** Cruise No. **MSM138**

2. Dates of cruises **from Reykjavik, Iceland, June 16th 2025
to Reykjavik, Iceland, July 22nd 2025**

3. Operating Authority **Institute of Oceanography / University of Hamburg
Bundesstr. 53, D-20146 Hamburg, Germany
Tel.: +49-40-42838-3640 - Fax: +49-40- 4273-10063**

4. Owner (if different from para 3) **Federal State Mecklenburg-Vorpommern, Germany**

5. Particulars of ship:

Name	MARIA S. MERIAN
Nationality	German
Overall length	94,8 metres
Maximum draught	6,50 metres
Net tonnage	1.671 NT
Propulsion	Diesel Electric
Call sign	DBBT
IMO No.	9274197

6. Crew

Name of master	Klaus Bergmann
No. of crew	max. 24

7. Scientific personnel:

Name and address of scientist in charge:	Dr. Gabriele Uenzelmann-Neben Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung Am Alten Hafen 26 27568 Bremerhaven Germany
Phone:	+49-471-48311208
Fax:	+49-471-48311271
Email:	Gabriele.uenzelmann-neben@awi.de
No. of scientists	max. 22

8. Geographical areas in which ship will operate (with reference in latitude and longitude):
Iceland-Faroe Ridge -12°E/67.5°N, -1°E/64.5°N, -10°E/61.5°N, and -17°E/61°N, also see attachment a
9. Brief description of purpose of cruise:
Separating the Nordic Seas from the North Atlantic, the magmatic Greenland Scotland Ridge (GSR) has a strong influence on the pathways of the deep, cold water masses formed in the Nordic Sea by down-welling. Mixing and entrainment of those cold water masses play an important role in setting the properties of North Atlantic Deepwater, ventilating the North Atlantic, and setting the global ocean stratification. Thermal perturbations in the conduit that feeds the Iceland plume have been suggested to have had an effect on the depth of the GSR thereby restricting/enabling the overflow of the deep, cold water masses. Numerical simulations have further hypothesised that bathymetric modifications of the Iceland Faroe Ridge (IFR), the eastern element of the GSR, have had the strongest effect on variations in the overflow with a feedback on climate, e.g. during the Mid Pliocene Warm Period. Reconstructing the development of the IFR using seismic reflection as well as bathymetric and Parasound data with a link to DSDP and ODP drill sites will allow the identification of erosional unconformities, sediment drifts and channels – sedimentary features, which document pathways and intensity of the overflow. This in turn will result in important insights into the variations of flow paths and intensity of the Iceland Strait Overflow in response to uplift/subsidence of the IFR and climate variability.
10. Dates and names of intended ports of call:

**Reykjavik: For four days within the period of 10th of June 2025 and 19th June 2025
⇒ Planned so far from 13.06.2025 to 16.06.2025.**

**Reykjavik: For four days within the period of 19th of July 2025 and 28th July 2025
⇒ Planned so far from 22.07.2025 to 25.07.2025.**
11. Any special logistic requirements at ports of call:

Crew change; unloading/ loading of equipment; logistics; bunkering.

Part B: DETAIL

1. Name of research ship: **R.V. MARIA S. MERIAN** Cruise No. **MSM 138**
2. Dates of cruise **from Reykjavik, Iceland, June 16th 2025**
to Reykjavik, Iceland, July 22nd 2025
3. Purpose of research and general operational methods:
Separating the Nordic Seas from the North Atlantic, the magmatic Greenland Scotland Ridge (GSR) has a strong influence on the pathways of the deep, cold water masses formed in the Nordic Sea by down-welling. Mixing and entrainment of those cold water masses play an important role in setting the properties of North Atlantic Deepwater, ventilating the North Atlantic, and setting the global ocean stratification. Thermal perturbations in the conduit that feeds the Iceland plume have been suggested to have had an effect on the depth of the GSR thereby restricting/enabling the overflow of the deep, cold water masses. Numerical simulations have further hypothesised that bathymetric modifications of the Iceland Faroe Ridge (IFR), the eastern element of the GSR, have had the strongest effect on variations in the overflow with a feedback on climate, e.g. during the Mid Pliocene Warm Period. Reconstructing the development of the IFR using seismic reflection as well as bathymetric and Parasound data with a link to DSDP and ODP drill sites will allow the identification of erosional unconformities, sediment drifts and channels – sedimentary features, which document pathways and intensity of the overflow. This in turn will result in important insights into the variations of flow paths and intensity of the Iceland Strait Overflow in response to uplift/subsidence of the IFR and climate variability.
4. Attach chart showing (on an appropriate scale) the geographical area of the intended work, positions of intended stations, tracks of survey lines, positions of moored / seabed equipment:
See Attachment b.)
First entry into EEZ of coastal state: Expedition starts in Iceland
Last exit from EEZ of coastal state: Expedition ends in Iceland
Multiple EEZ entries/exits during the research cruise? YES
5. Types of samples required (e.g., Geological / Water / Plankton / Fish / Radioactivity / Isotope) and (b) methods by which samples will be obtained (including dredging / coring / drilling/ fishing etc.).

(a) Type of samples	(b) Method
Water Samples	Permanent surface water sampling / analysis (incl. Thermosalinograph)

6. Details of moored equipment: **No equipment will be moored.**

Laying	Recovery	Description	Latitude	Longitude

7. Explosives: **No explosives.**

8. Detail and reference of

(a) Any relevant previous / future cruises: **n/a**

(b) Any previous published research data relating to the proposed cruise. (Attach separate sheet if necessary.): **n/a**

9. Names and addresses of scientists of the coastal state in whose waters the proposed cruise takes place with whom previous contact has been made:

Dr. Christoph Böttner
Marie-Skłodowska-Curie Fellow
Department of Geoscience
Aarhus University
phone +45-93 52 24 61
mail christoph.boettner@geo.au.dk

10. State:

(a) Whether visits to the ship in port by scientists of the coastal state concerned will be acceptable:

Yes, after discussion

(b) Whether it will be acceptable to carry on board an observer from the coastal state for any part of the cruise and dates and ports of embarkation/disembarkation:

Yes, after discussion.

Embarkation: Reykjavik, 15th June 2025

Disembarkation: Reykjavik, 22nd July 2025

(c) When research data from intended cruise is likely to be made available to the coastal state and if so by what means:

- **Cruise Report three months after finishing the research cruise.**
- **Scientific publication within the following three years.**

Part C: SCIENTIFIC EQUIPMENT

COASTAL STATE: Iceland

11. Complete the following table - (indicate 'YES' or 'NO'):

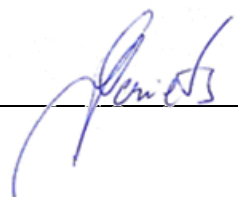
Please add in "b" the equipment you will bring to the vessel and complete the table with yes or no. Note that forgotten equipment can lead to restrictions in research.

List of all major marine scientific equipment it is proposed to use.	Fisheries research within fishing limits	Research concerning continental shelf out to State's margin	Waters in which equipment will be deployed			
			within 3 NM	between 3-12 NM	between 12-50 NM	between 50-200 NM

a. vessel mounted systems						
ADCP current profiler	no	no	no	no	yes	yes
USBL underwater positioning	no	no	no	no	yes	yes
Multibeam echosounder	no	no	no	no	yes	yes
Sub-bottom profiler Parasound P70	no	no	no	no	yes	yes
Permanent surface water sampling / analysis (incl. Thermosalinograph)	no	no	no	no	yes	yes
b. mobile equipment						
Sound velocity probe AML SV PlusX	no	no	no	no	yes	yes
XSV Expendable Sound Velocimeter	no	no	no	no	no	no
Sercel SEAL 428, Sercel GI-gun with streamer	no	no	no	no	yes	yes

Hamburg, 28.11.2024

Date



Universität Hamburg
 CEN Centrum für Erdsystemforschung und Nachhaltigkeit
 Leitstelle Deutsche Forschungsschiffe
 Bundesstr. 55
 D-20146 Hamburg
 - Germany -

(On behalf of the principal scientist)

NB IF ANY DETAILS ARE MATERIALLY CHANGED REGARDING DATES/AREA OF OPERATION AFTER THIS FORM HAS BEEN SUBMITTED, THE COASTAL STATE AUTHORITIES MUST BE NOTIFIED IMMEDIATELY

Attachments a) und b)

