

Project Endorsement Form

1. PROJECT TITLE

Full title	Cruise SO276
Acronym	GEOTRACES-SIO
Website	
Keywords (up to 10, describing the project research)	GEOTRACES, trace elements, Mozambique Channel, subtropical gyre
New initiative or continuing programme?	Cruise as part of the International GEOTRACES Programme

2. APPLICANTS

Lead applicant / Project Leader / key research contact person:

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Other key participants / research team leaders: (repeat as needed)

First name	Martin
Last name	Frank
Role in the project	Co-chief scientist
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Other key participants / research team leaders: (repeat as needed)

First name	Zvi
Last name	Steiner
Role in the project	Lead of the trace element group
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N.B.: Please note that all these names and contact details will be added to the IIOE-2 membership database.

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3. ABSTRACT– Brief description of the project: (1/4 page maximum)

This will be placed on the IIOE-2 Website after endorsement.

A research cruise on-board FS Sonne will take place in the South Indian Ocean (SIO) from Durban (South Africa) to Fremantle (Australia) in July-August 2020, with a focus on trace metal biogeochemistry and chemical oceanography but also including physical and biological oceanographic components. The research topic of the cruise is to determine in detail the distributions, sources and sinks of trace elements and their isotopes (TEIs) in the water column along a zonal section in one of the least studied ocean regions on earth. We aim to investigate the biogeochemical cycling of TEIs, and their interactions with surface ocean productivity and the carbon and nitrogen cycles (incl. N₂ fixation (diazotrophy)) given that some TEIs act as micronutrients. The findings will have global significance for understanding the chemical environment in which ecosystems operate. The supply pathways of TEIs to the SIO from the ocean boundaries including the atmosphere (Australian dust), continents (mainly the Zambezi River), sediments (on continental slopes), and the ocean crust (hydrothermalism) will be investigated. The TEI transport within water masses will be determined, which will allow a more reliable use of some TEIs as paleo circulation proxies.

4. LINKS TO IIOE-2 SCIENCE PLAN: (1/2 page maximum)

How do you anticipate your project to contribute to the IIOE-2 strategy and science delivery, with reference to which (either one or more) of the six IIOE-2 Science Plan themes that your project responds. Please state the specific issues and questions addressed by your project in the context of the IIOE-2 Science Plan themes and key issues.

The research expedition relates to the following IIOE-2 themes:

1. Boundary currents and upwelling: a special emphasis is placed in the cruise plan on study of the Mozambique Channel and Leeuwin Current.
2. Circulation and Climate Change: activities in the cruise include study of the physical oceanography of the subtropical gyre of the South Indian Ocean as well as detailed analyses of the carbonate chemistry along the cruise transect. The cruise transect largely repeats WOCE section IO3, which will allow investigation of changes in the carbonate chemistry of the South Indian Ocean since 1995.
3. Discovery: This will be a first attempt to study the cycling of a large number of trace elements and their isotopes as well as a wide array of biological oceanography components in this part of the global ocean.

5. INTERNATIONAL COLLABORATION(S):

Is the project part of a related multi-national activity? **YES**

If No, would you welcome international collaboration in your project? **YES/NO**

6. REGION(S) OF STUDY

Provide a description of 'where' the research is to be conducted (for field based activities) and/or the region or regions to which the research pertains (you are encouraged to consider providing either the coordinates of the area of studies or the coordinates of the planned cruise tracks, as well as a figure as an addendum to your proposal).

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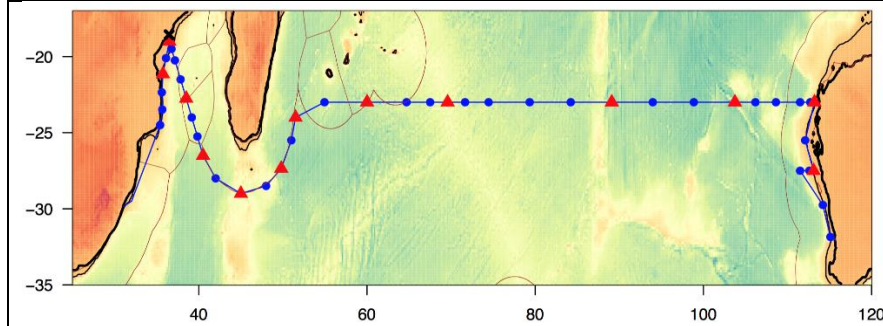


Fig. 1: Map of the planned cruise track. Blue circles mark full oceanographic stations. Red triangles mark super-stations where samples will be collected for an extended number of analyses.

6. TIMETABLE OF THE PROJECT

Start date: 07 July 2020	End date: 25 August 2020
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7. LINKAGES WITH OTHER PROJECTS / PROGRAMMES / INITIATIVES

Is the project part of a related national or multi-national activity?

If yes, provide the related activity title and website for reference, if available:

This cruise is officially part of the internationally coordinated GEOTRACES programme. The GEOTRACES cruise number of the cruise will be GPI07.

Is your project part of, or affiliated to, another SCOR, IOC or IOGOOS activity or project?

If “yes”, please indicate which activity or project:

8. DATA MANAGEMENT AND SHARING

1. Will new data be collected as part of this project (yes or no?)

Yes. Data will be lodged with PANGEA and the GEOTRACES datacentre BODC in the UK

2. Contact information if any, of the person in charge of the data management from whom the metadata can be accessed by interested IIOE-2 stakeholders.

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Please note that for all IIOE-2-endorsed projects, IIOE-2 will have developed its own metadata portal. Once the project is endorsed, the project leader will be asked to provide the metadata information of the project.

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3. Recognizing the need for an initial period of exclusive data use, would you be willing to provide timely access to all data generated under this project and associated metadata in accordance with relevant national and funding agency data sharing policies? **YES**

9. FUNDING

Please note that IIOE-2 strongly encourages funded/resourced projects. However, IIOE-2 may endorse projects yet to receive funding/resourcing if IIOE-2 endorsement can be clearly shown to significantly aid in prospects for funding/resourcing.

Has funding and resources to successfully achieve and undertake the project been obtained? Indicate the sources of funding and resources that have been approached and/or secured.

The cruise is sponsored by the German Federal Ministry of Education and Research (BMBF).

10. BENEFITS FROM IIOE-2 ENDORSEMENT (1/4 page maximum)

Specify why you are seeking endorsement and how the activity would benefit from endorsement, and how the IIOE-2 SC could assist in the implementation of your project.

We hope to achieve two outcomes by the IIOE-2 endorsement:

1. Increase the visibility of this research expedition and surrounding activities to the Indian Ocean research community.
2. Facilitate funding proposals for work that will be done during and after the cruise.

11. OPTIONAL: OTHER COMMENTS/INFORMATION/MATERIAL (length and detail may be at the discretion of and as deemed necessary by the applicant)

Please feel free to provide any other comments, information or materials that you feel relevant to your proposal for the IIOE-2 Steering Committee's information and benefit. You may provide this as general information or provide the additional comments/information/materials as relevant to any of the specific Sections above.

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2nd International
Indian Ocean
Expedition
2015-2020



Prof. Dr. Eric Achterberg

GEOMAR

(Signature of the PI)

IIOE-2 Joint Project Office (JPO)

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