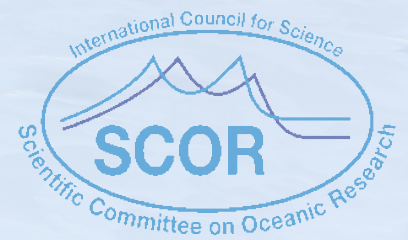


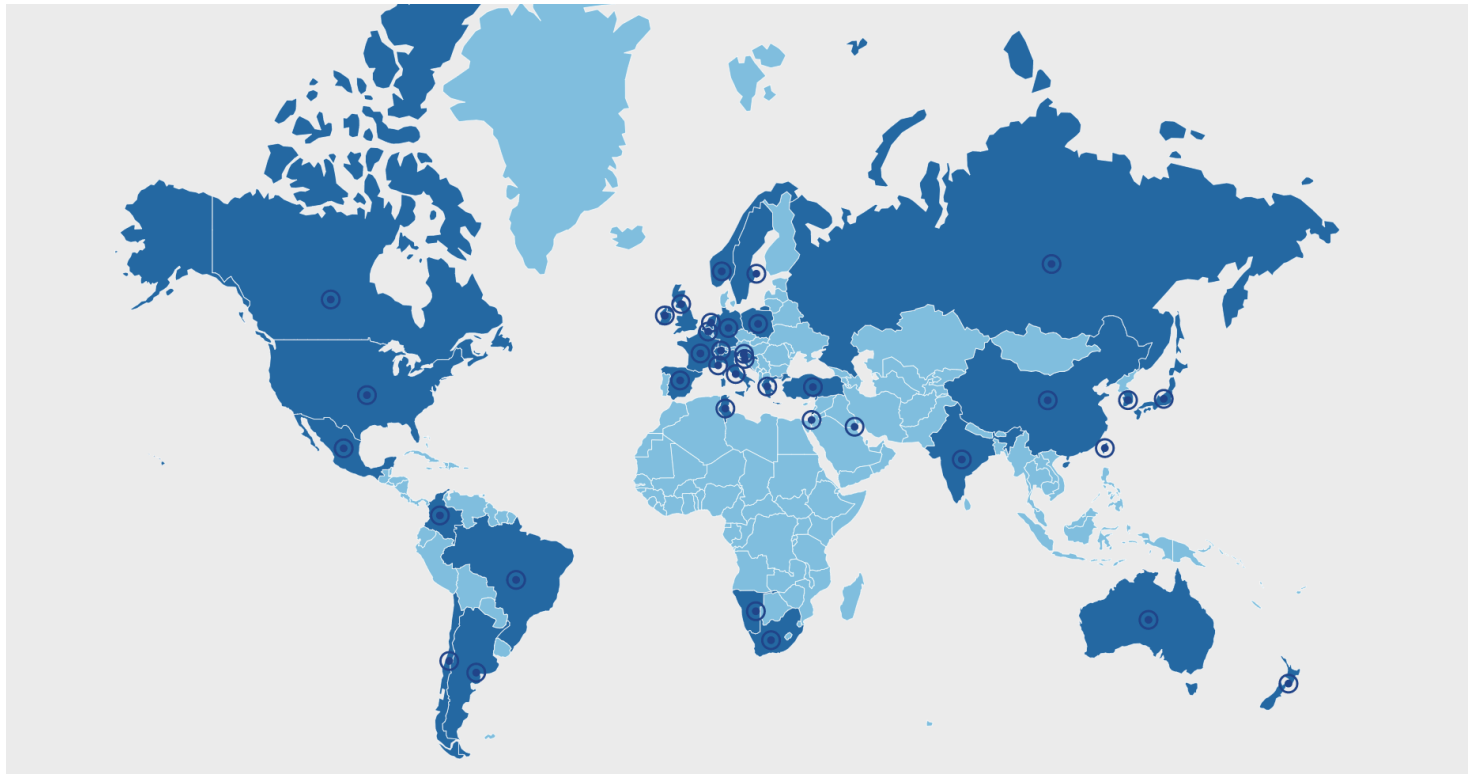
GEOTRACES

An International Study of the Marine Biogeochemical
Cycles of Trace Elements and their Isotopes

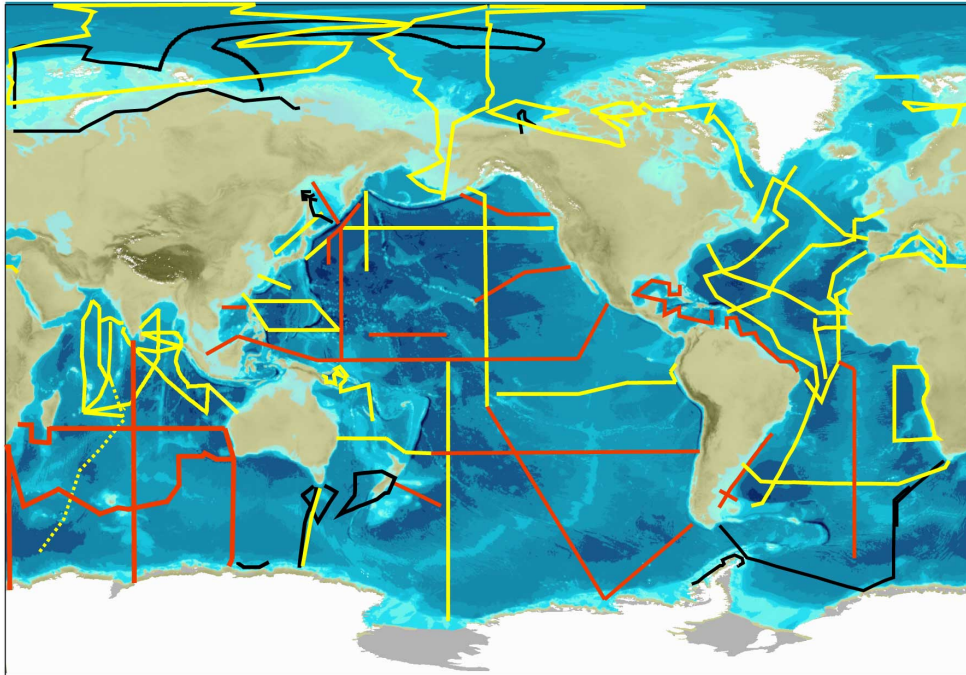


GEOTRACES mission

- **GEOTRACES** mission is to identify processes and quantify fluxes that control the distributions of key trace elements and isotopes (TEIs) in the ocean, and to establish the sensitivity of these distributions to changing environmental conditions
- Scientists from more than **35 nations** have been involved in the programme, which is designed to study all major ocean basins



GEOTRACES presentation card



To date:

35 nations

121 cruises completed

41 sections completed
(in yellow and black)

1,469 publications

Data Products in 2014 and 2017

New data product forthcoming in 2021!

Map legend: Map of GEOTRACES sections. In red: Planned Sections. In yellow: Completed Sections. In black: Sections completed as GEOTRACES contribution to the IPY.

GEOTRACES field programme operations

The GEOTRACES field programme includes **three different types of cruises:**

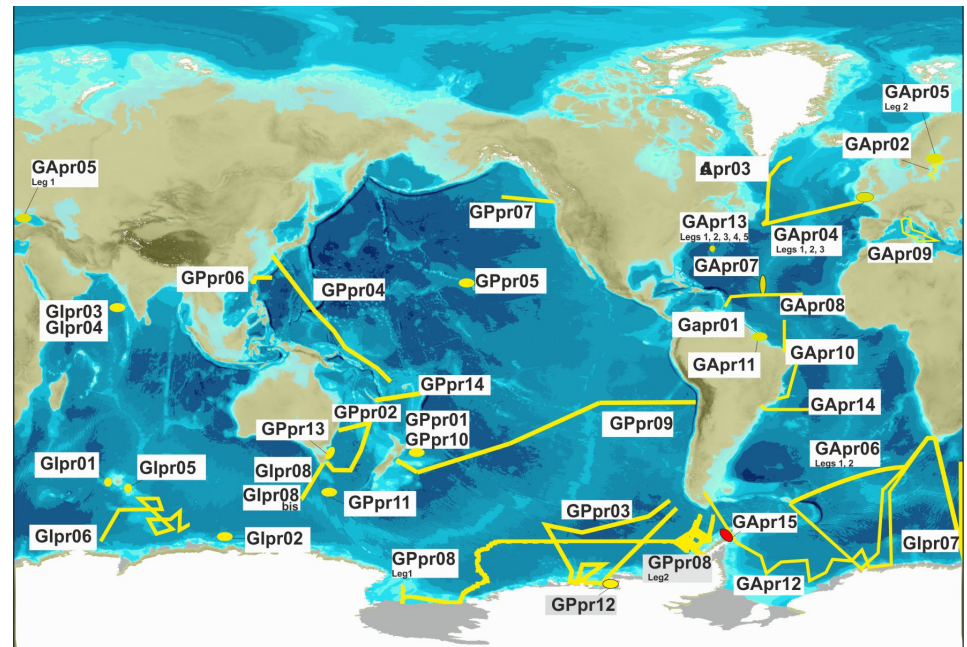
GEOTRACES Sections – These cruises cover all key TEI parameters over the full depth of the water column.

GEOTRACES Process Studies -

The programme endorses a number of studies that focus on particular regions or processes, with often a smaller subset of TEIs studied. (see map)

GEOTRACES compliant data -

GEOTRACES collates appropriately intercalibrated TEI data from other cruises.

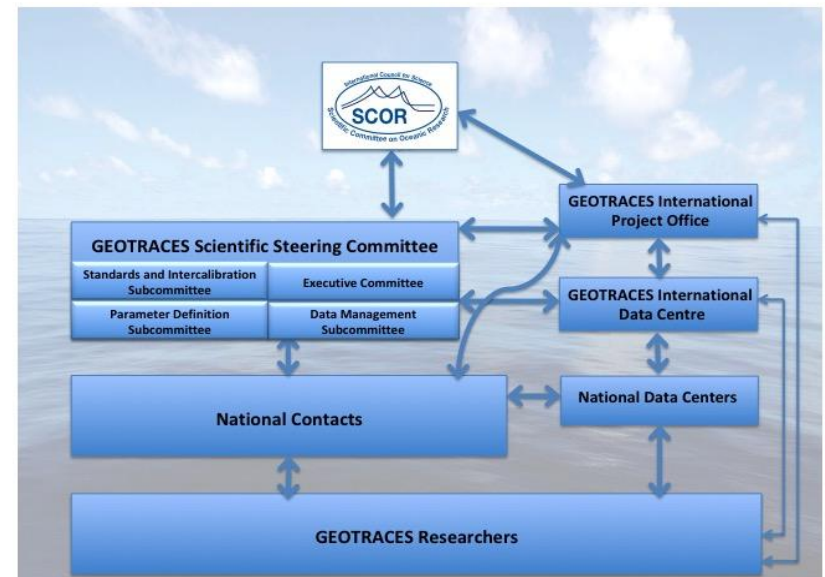


GEOTRACES cruises must be approved by the Scientific Steering Committee (SSC).

Decisions are based on the compliance of the pre-defined criteria as established and regularly reviewed by the SSC: <http://www.geotraces.org/cruises/cruise-summary>.

GEOTRACES Organisation

- Quality and internal consistency of collected data rigorously controlled by intercalibration protocols, under the supervision of a **Standards and Intercalibration (S&I) committee**.
- With more than 3000 parameters identified, a **Parameter Definition Committee** was formed to create a rigorous structure of parameter designation.
- Once validated, the data are sent to the **GEOTRACES Data Assembly Centre** (GDAC, BODC, UK) under the supervision of the **Data Management Committee** (DMC) and publicly released through GEOTRACES Intermediate Data Products
- The management and coordination is done by **International Project Office** (IPO) hosted in Toulouse (France), under the supervision of the **Scientific Steering Committee (SSC)**.

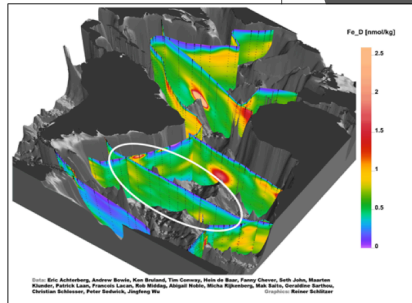
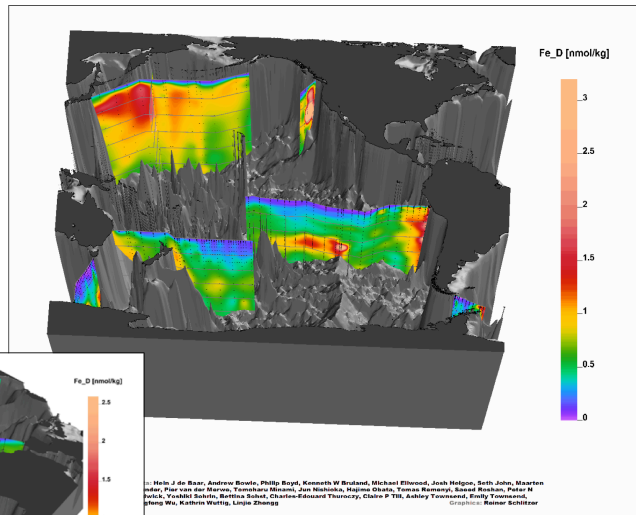


GEOTRACES Intermediate Data Product, IDP2017

Freely available on-line!

Trace metal data from more than 1800 stations and 39 cruises

It includes: (1) a compilation of digital trace metal data (geotraces.org/dp)
(2) the eGEOTRACES Electronic Atlas (egeotraces.org)



***** Subset data extractor *****
<https://geotraces.webodv.awi.de/>

GEOTRACES Services

GEOTRACES is an international research programme that aims to improve an understanding of biogeochemical cycles in the oceans.

The GEOTRACES Services are developed at the Alfred Wegener Institute (AWI) in Bremerhaven, Germany.

GEOTRACES Data Extractor IDP2017

The GEOTRACES data extraction service provides an alternative to the full package downloads by providing cruise, domain and variable selection functionality.

Discrete Sample Data v2

CTD Sensor Data v1

Aerosol Rain Data v2

Older versions ▾

3D scenes showing the distribution of dissolved iron (DFe) in the Atlantic and the Pacific. Hydrothermal iron inputs and important release of DFe from the margin sediments are identified in the two

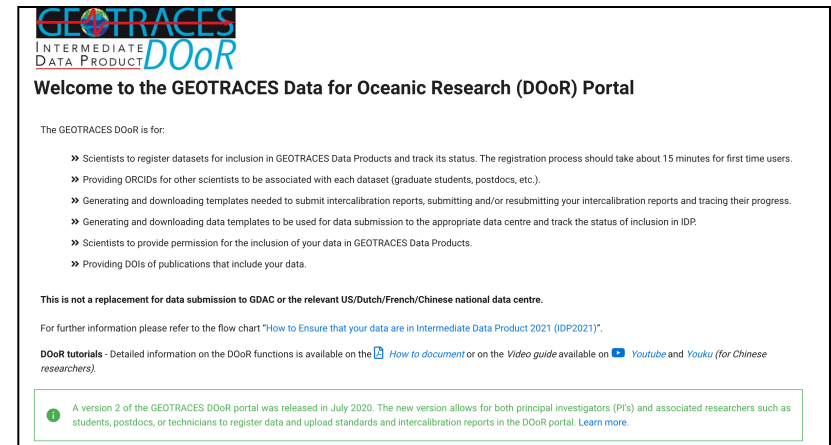
GEOTRACES Intermediate Data Product 2021

Working for a next release of the
GEOTRACES Intermediate Data Product (IDP)
in 2021



GEOTRACES Data for Oceanic Research (DOoR)

- **Dedicated on-line portal to register data sets** for intercalibration and potential inclusion in IDP2021, generate templates for data submission and provide necessary metadata for the building of the IDP2021.
- **Management tool** for GEOTRACES subcommittees and GDAC to work on the preparation of the IDP2021.



GEOTRACES
INTERMEDIATE DATA PRODUCT **DOoR**

Welcome to the GEOTRACES Data for Oceanic Research (DOoR) Portal

The GEOTRACES DOoR is for:

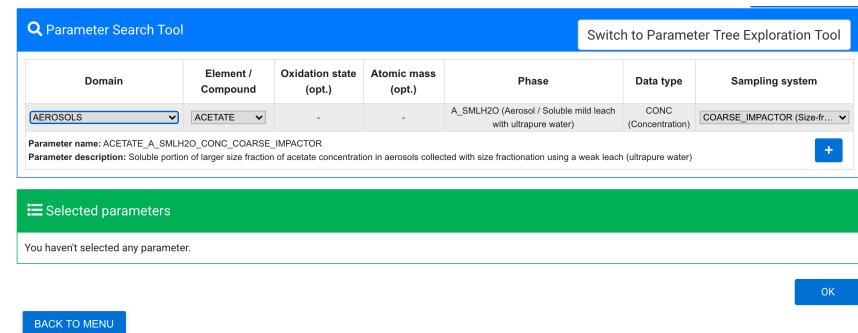
- » Scientists to register datasets for inclusion in GEOTRACES Data Products and track its status. The registration process should take about 15 minutes for first time users.
- » Providing ORCID's for other scientists to be associated with each dataset (graduate students, postdocs, etc.).
- » Generating and downloading templates needed to submit intercalibration reports, submitting and/or resubmitting your intercalibration reports and tracing their progress.
- » Generating and downloading data templates to be used for data submission to the appropriate data centre and track the status of inclusion in IDP.
- » Scientists to provide permission for the inclusion of your data in GEOTRACES Data Products.
- » Providing DOIs of publications that include your data.

This is not a replacement for data submission to GDAC or the relevant US/Dutch/French/Chinese national data centre.

For further information please refer to the flow chart "[How to Ensure that your data are in Intermediate Data Product 2021 \(IDP2021\)](#)".

DOoR tutorials - Detailed information on the DOoR functions is available on the [How to document](#) or on the [Video guide](#) available on [Youtube](#) and [Youku](#) (for Chinese researchers).

i A version 2 of the GEOTRACES DOoR portal was released in July 2020. The new version allows for both principal investigators (PIs) and associated researchers such as students, postdocs, or technicians to register data and upload standards and intercalibration reports in the DOoR portal. [Learn more](#).



Parameter Search Tool Switch to Parameter Tree Exploration Tool

Domain	Element / Compound	Oxidation state (opt.)	Atomic mass (opt.)	Phase	Data type	Sampling system
AEROSOLS	ACETATE	-	-	A_SMLH2O (Aerosol / Soluble mild leach with ultrapure water)	CONC (Concentration)	COARSE_IMPACTOR (Size-fr....)

Parameter name: ACETATE_A_SMLH2O_CONC_COARSE_IMPACTOR
Parameter description: Soluble portion of larger size fraction of acetate concentration in aerosols collected with size fractionation using a weak leach (ultrapure water)

Selected parameters
You haven't selected any parameter.

BACK TO MENU OK

<https://geotraces-portal.sedoo.fr/pi/>



Publicity documents

A review constituting the half-way mark of GEOTRACES

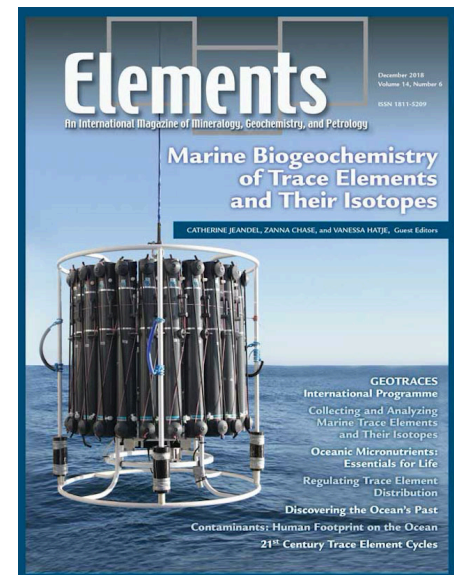
Anderson, R. F. (2020). *GEOTRACES: Accelerating Research on the Marine Biogeochemical Cycles of Trace Elements and Their Isotopes*. *Annual Review of Marine Science*, 12(1), <https://doi.org/10.1146/annurev-marine-010318-095123>

- Review of the motivation and foundation processes of GEOTRACES,
- overview of many results of GEOTRACES activities related to the three guiding themes of the programme: (1) fluxes and processes at ocean interfaces (2) internal cycling of TEIs, and 3) the development of proxies for past change.

Elements issue devoted to GEOTRACES

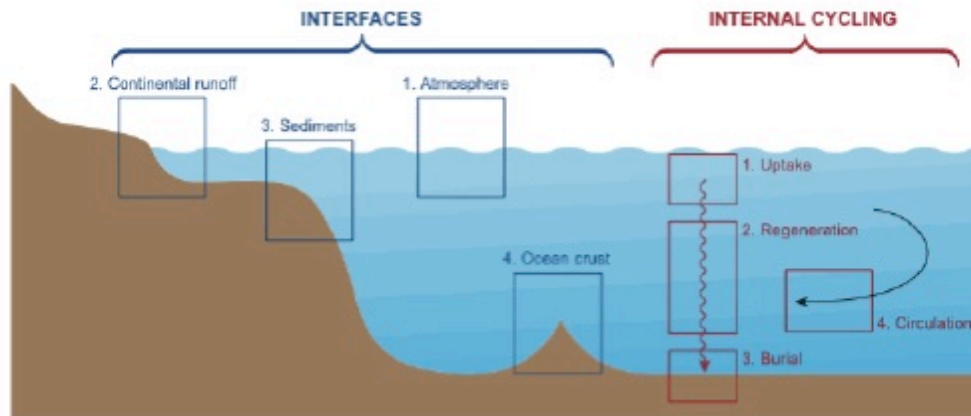
Marine Biogeochemistry of Trace Elements and Their Isotopes

Catherine Jeandel, Zanna Chase, and Vanessa Hatje – Guest Editors



GEOTRACES Synthesis Strategy

1- Supply and removal of TEI at ocean interfaces	2- Internal cycling of TEIs within the ocean	3- Geochemical tracers as paleoceanographic proxies
<p>2 Royal Society Scientific Meetings</p> <p>December 2015</p>	<p>Joint GEOTRACES Ocean Carbon and Biogeochemistry (OCB) programme Workshop</p> <p>August 2016</p>	<p>Exploring partnership with the Past Global Changes project (PAGES)</p> <p>December 2018</p>



+ 4th synthesis workshop planned :

Sensitivity of TEI distribution to environmental change

-> to be held in 2023

3rd GEOTRACES Summer School planned for 2021

- 11 – 16 July 2021 in Bremerhaven, Germany
- 50 students and 12 lecturers
- Course to include:
 - Lectures
 - Training in shipboard sampling (*RV Heincke*)
 - Sample processing
 - Some key analytical techniques
 - (web)ODV training
 - Workshops: Environmental aspects, Global change

(considering organising series of webinars in case in person summer school is not possible)
- Organisers: Walter Geibert (AWI), POLMAR Graduate School @AWI (Claudia Hanfland)



Learn more about GEOTRACES

GEOTRACES web site
www.geotraces.org

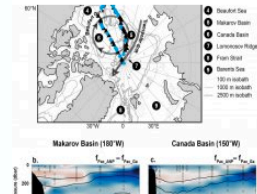


GEOTRACES eNewsletter



August 2020 - Issue #40

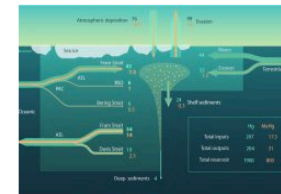
GEOTRACES Science Highlights



Dissolved gallium unravels Pacific and Atlantic waters in the Arctic Ocean

Whitmore and co-workers

dissolved gallium
better water
than the nutrient

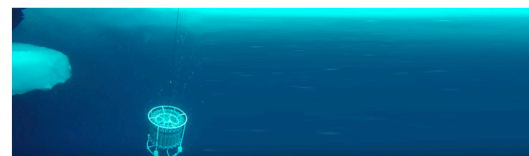


Precise estimate of the mercury export from the Arctic to the Atlantic Ocean

Using new observations acquired during GEOTRACES Arctic cruises, a refined arctic mercury budget has been established

Subscribe to our eNewsletter and mailing list!
<https://www.geotraces.org/subscribe-mailing-list-2/>

GEOTRACES eNewsletter
Special Issue: Outreach
GEOTRACES and Climate Research



Read more...

Read more...



2020 GEOTRACES SSC members

Co-Chairs

- Andrew Bowie, Australia
- Karen Casciotti, USA

Members

- Eric Achterberg, Germany
- Adrian Burd, USA
- Zanna Chase, Australia
- Jay T. Cullen, Canada
- Susanne Fietz, South Africa
- Tina van de Flierdt, UK
- Marina Kravishina, Russia
- Rob Middag, Netherlands
- Hajime Obata, Japan
- Haojia (Abby) Ren, China-Taipei
- Yeala Shaked, Israel
- Kazuyo Tachikawa, France
- Rodrigo Torres, Chile
- Antonio Tovar-Sanchez, Spain
- Liping Zhou, China-Beijing



GEOTRACES sub-committees co-chairs

Standards and Intercalibration Committee

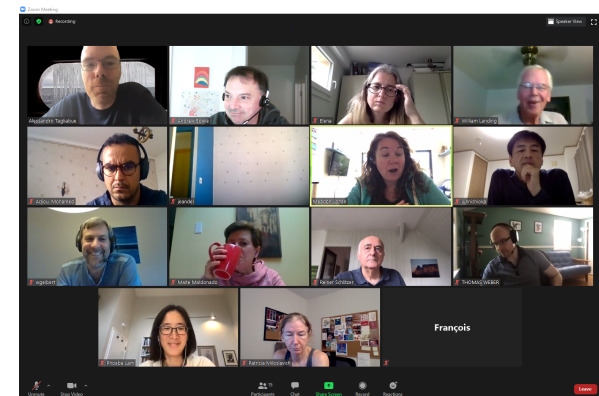
- Maeve Lohan, UK
- Walter Geibert, Germany

Data Management Committee

- Alessandro Taglibue, UK
- William Landing, USA

Parameter Definition Committee

- Bob Anderson, USA
- Catherine Jeandel, France
- William Landing, USA



Thank you very much!

Contact us

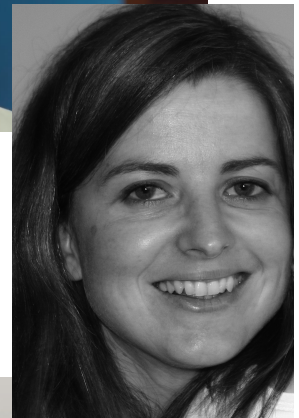
International Coordination:

GEOTRACES International Project Office
(LEGOS-OMP, Toulouse, France)

Catherine Jeandel (Scientific Director)
Elena Masferrer Dodas (Executive Officer)
ipo@geotraces.org

Data Management:

Mohamed Adjou (Data Manager)
GEOTRACES Data Assembly Centre (BODC, Liverpool)
geotraces.dac@bodc.ac.uk



www.geotraces.org

