

# GEOTRACES IDP2021

WHAT DOES IT INCLUDE  
HOW CAN IT BE ACCESSED

**Reiner Schlitzer**

Alfred Wegener Institute, Bremerhaven, Germany



# SERIES OF INTERMEDIATE DATA PRODUCTS



# IDP2021 COMPONENTS

## 1 Digital Data

## 2 *eGEOTRACES* Atlas

# DIGITAL DATA

- 1 **Seawater Discrete Sample Data**
- 2 **Seawater Sensor Data**
- 3 **Aerosol Data**
- 4 **Precipitation Data**
- 5 **Cryosphere Data**

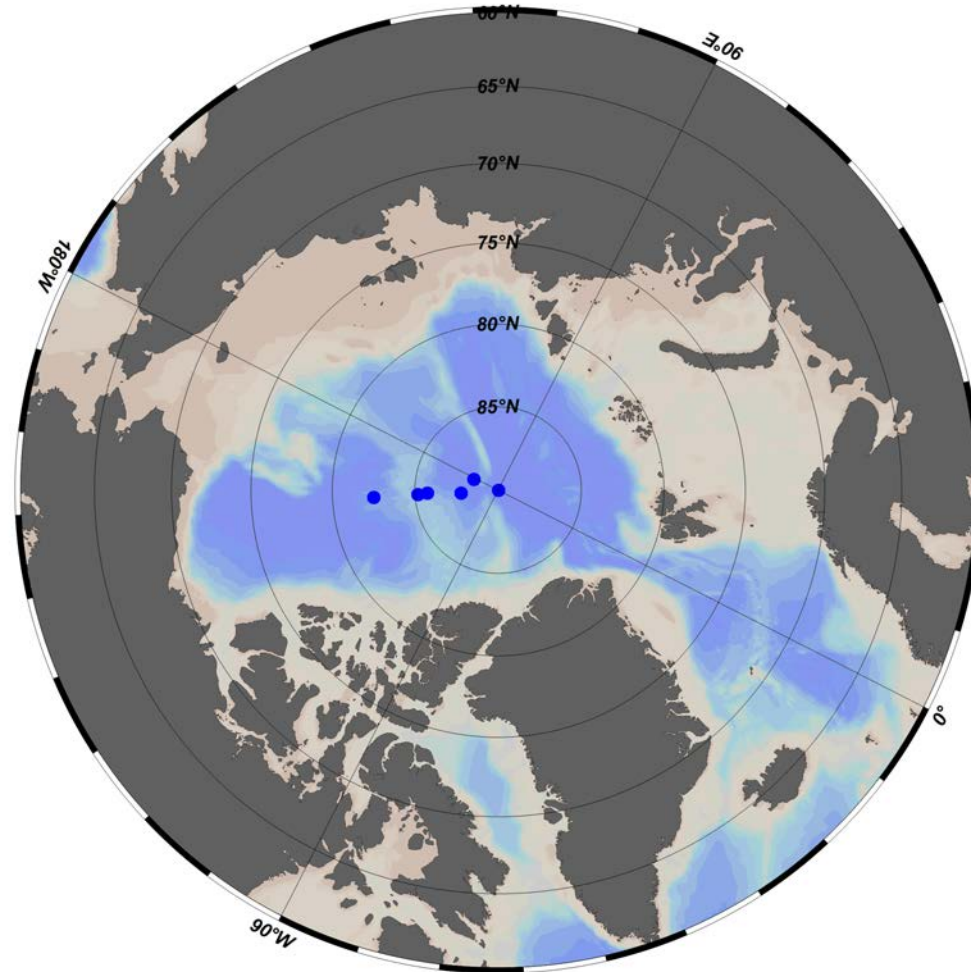
# CRYOSPHERE DATA

NEW

GEOTRACES\_IDP2021\_Cryosphere\_Data\_v1

6 Stations

Ice and meltpond data for 10 TEIs

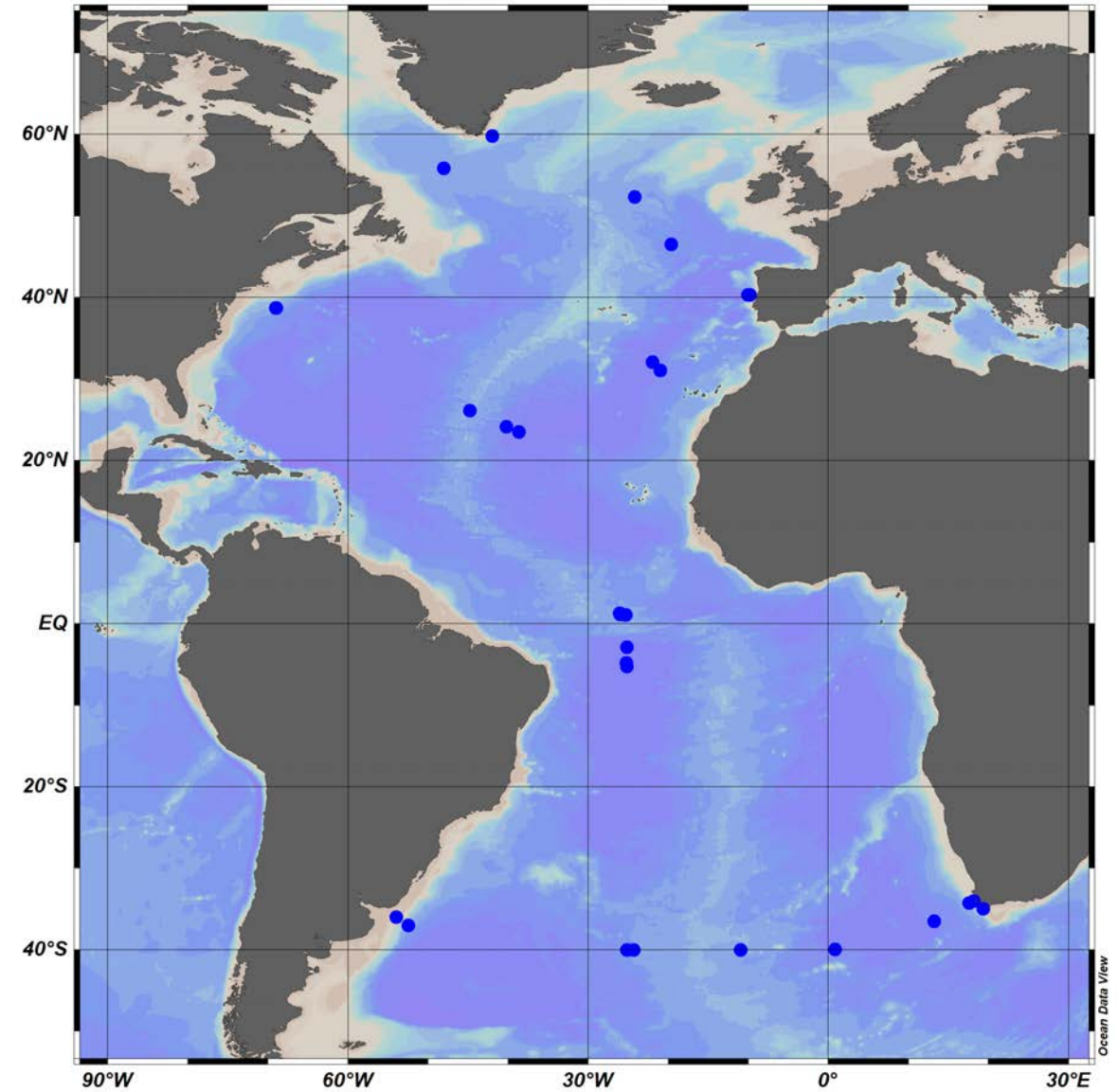


# PRECIPITATION DATA

Rain data for 75 TEIs

GEOTRACES\_IDP2021\_Precipitation\_Data\_v1

31 Stations

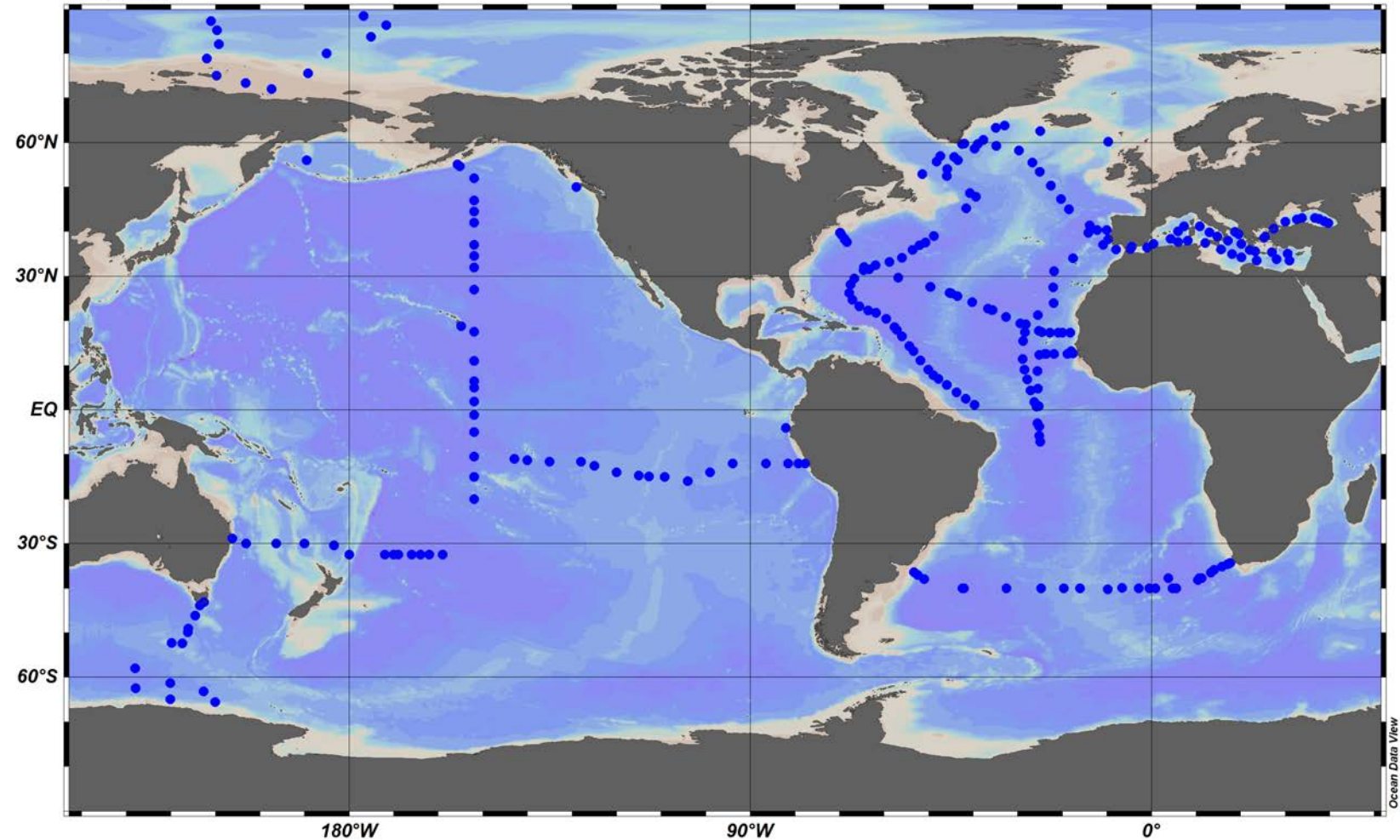


# AEROSOL DATA

Aerosol data for 167 TEIs

GEOTRACES\_IDP2021\_Aerosol\_Data\_v1

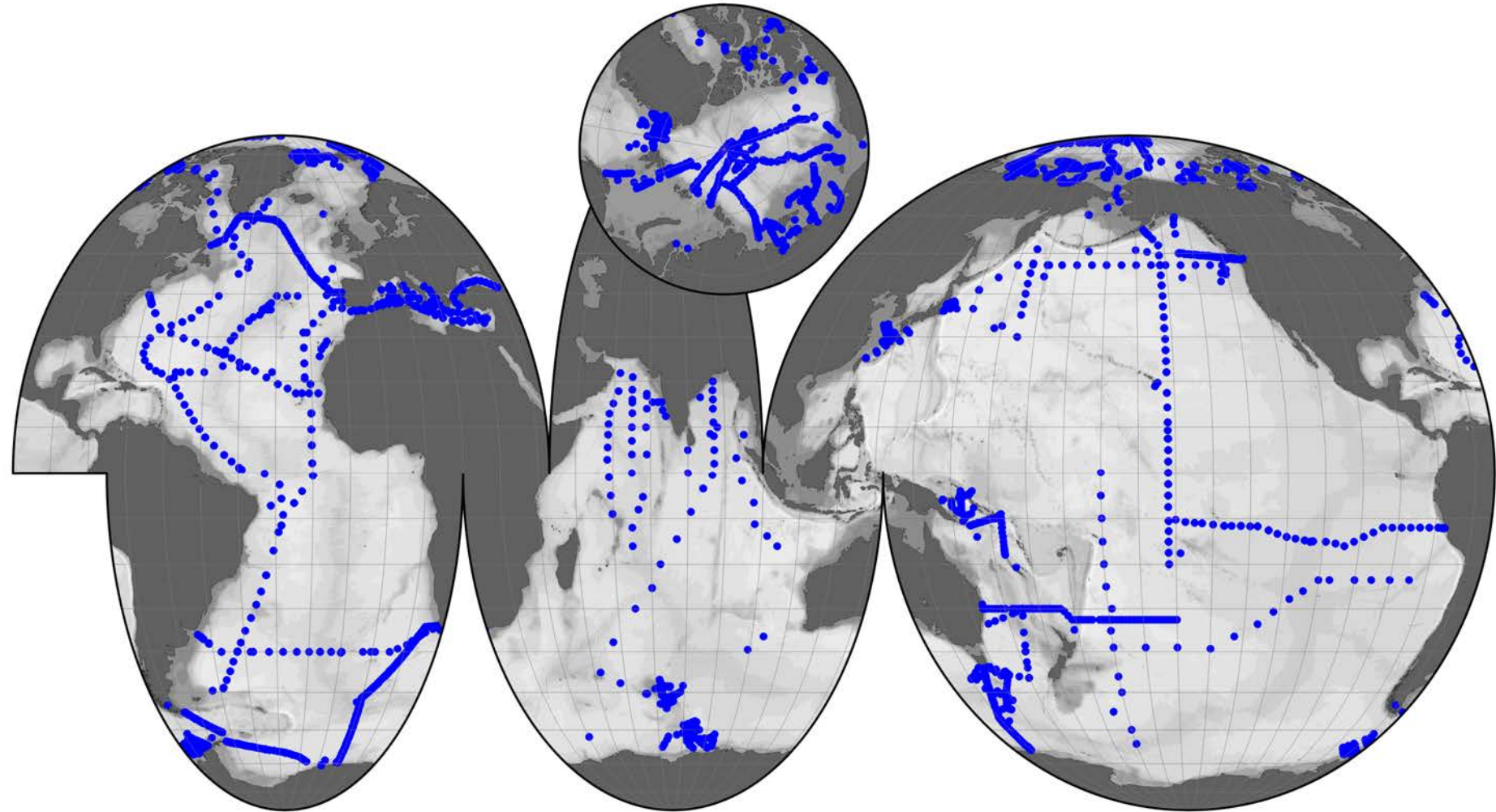
270 Stations



# SEAWATER SENSOR DATA

Sensor data for:

- Temperature
- Salinity
- Oxygen
- Chlorophyll
- Fluorescence
- Beam attenuation
- Turbidity
- PAR

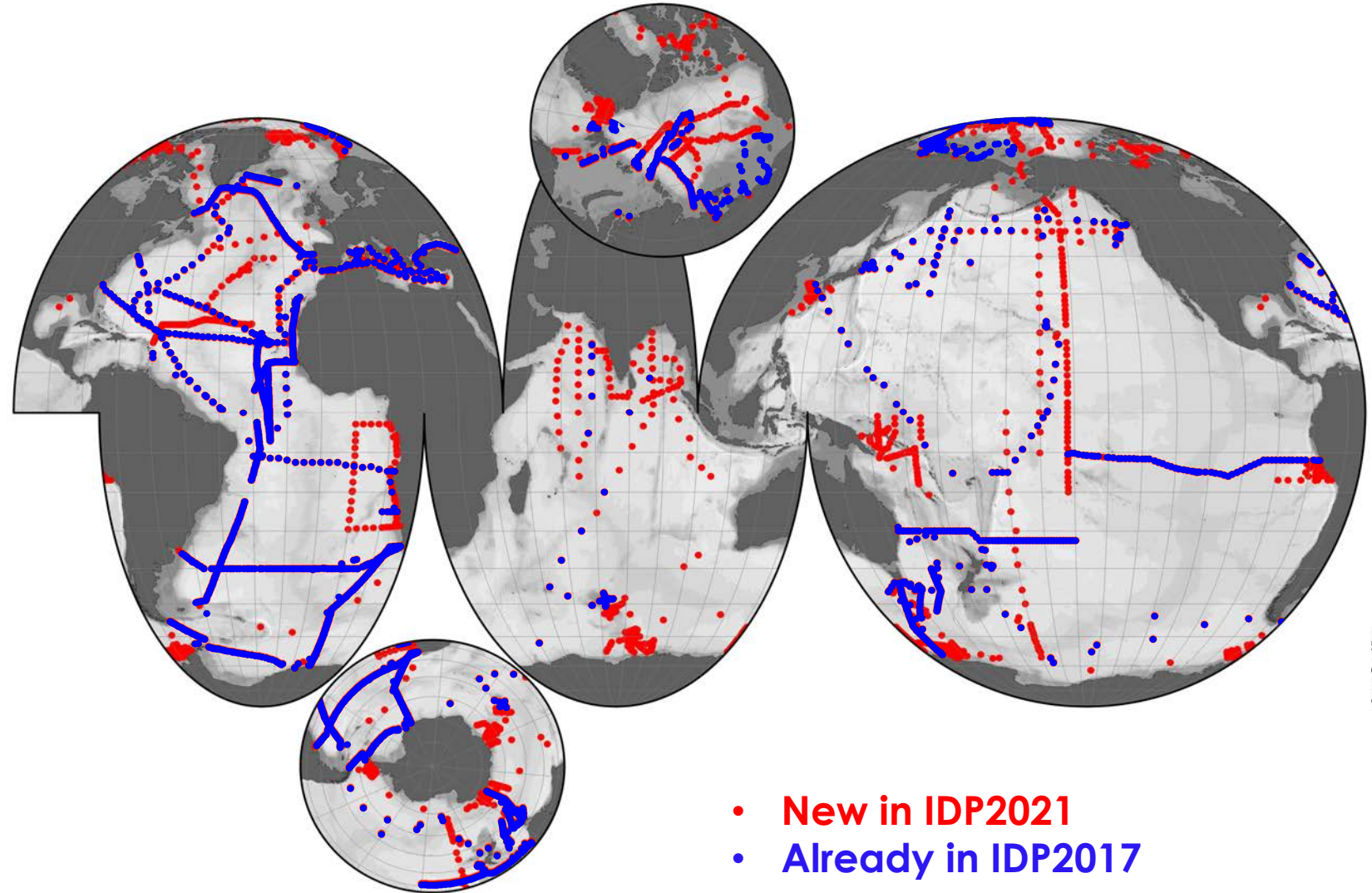




# SEAWATER DISCRETE SAMPLE DATA

Data for 570 TEIs

- Better coverage (e.g., Indian Ocean and Arctic)
- Doubling of cruise, station and data value counts
- More than 350 data contributors



# METADATA INFO FILES

## Fe\_D\_CONC\_BOTTLE @ GP18 (KH11-07)

- Available for all cruises and parameters
- Information about parameter, data creators, analytical method and cruise
- Dynamic publication retrieval

### • Parameter Description

Concentration of dissolved Fe

Parameter: Fe\_D\_CONC\_BOTTLE

Cruise: GP18

1 Publications

TEXT EXPORT

BIBTEX EXPORT

2015

Minami, T., Konagaya, W., Zheng, L., Takano, S., Sasaki, M., Murata, R., Nakaguchi, Y., & Sohrin, Y. (2015). An off-line automated preconcentration system with ethylenediaminetriacetate chelating resin for the determination of trace metals in seawater by high-resolution inductively coupled plasma mass spectrometry. *Analytica Chimica Acta*, 854, 183–190. doi:[10.1016/j.aca.2014.11.016](https://doi.org/10.1016/j.aca.2014.11.016)

### • References

[Link to publications associated with these data](#)

# DIGITAL DATA SUMMARY

- **New data types**
- **Improved geographical coverage**
- **Doubling of data value count**

# IDP2021 ACKNOWLEDGEMENTS

**GEOTRACES Standards and Intercalibration Committee:** Walter Geibert, Maeve Lohan, Ana Aguilar-Islas, Karen Casciotti, Tina van de Flierdt, Lars-Eric Heimbürger, Yoshiko Kondo, Hélène Planquette, Alyson Santoro, Peter Sedwick.

**GEOTRACES Data Management Committee:** William Landing, Alessandro Tagliabue, Maite Maldonado, Jun Nishioka, Reiner Schlitzer, Sunil Kumar Singh, Thomas Weber.

**GEOTRACES Parameter Definition Committee:** Bob Anderson, Catherine Jeandel, William Landing, Maeve Lohan, Maite Maldonado, Reiner Schlitzer, Jing Zhang.

**GEOTRACES International Data Assembly Center:** Mohamed Adjou, Donna Cockwell, Gwenaëlle Moncoiffé, Paul A McGarrigle, Helen Snaith, Kay Thorne.

**GEOTRACES DOoR:** François André, Guillaume Brissebrat, Arnaud Mière, Elena Masferrer Dodas.

**WebODV Development:** Sebastian Mieruch-Schnülle, Reiner Schlitzer.

**GEOTRACES International Project Office:** Catherine Jeandel, Elena Masferrer Dodas.

**National Data Centers:** Shannon Rauch, Yuko Otsu, Norio Baba, Catherine Schmechtig, Marten Tacoma, Taco de Bruin.

Financial Support from the **Scientific Committee on Oceanic Research** (SCOR) through grants from the U.S. National Science Foundation (OCE-0608600, OCE-0938349, OCE-1243377, OCE-1546580, OCE-1840868, and OCE-2140395) and from contributions from member countries.

# EGEOTRACES ATLAS

<https://egeotrac.es.org/>

## eGEOTRACES Electronic Atlas

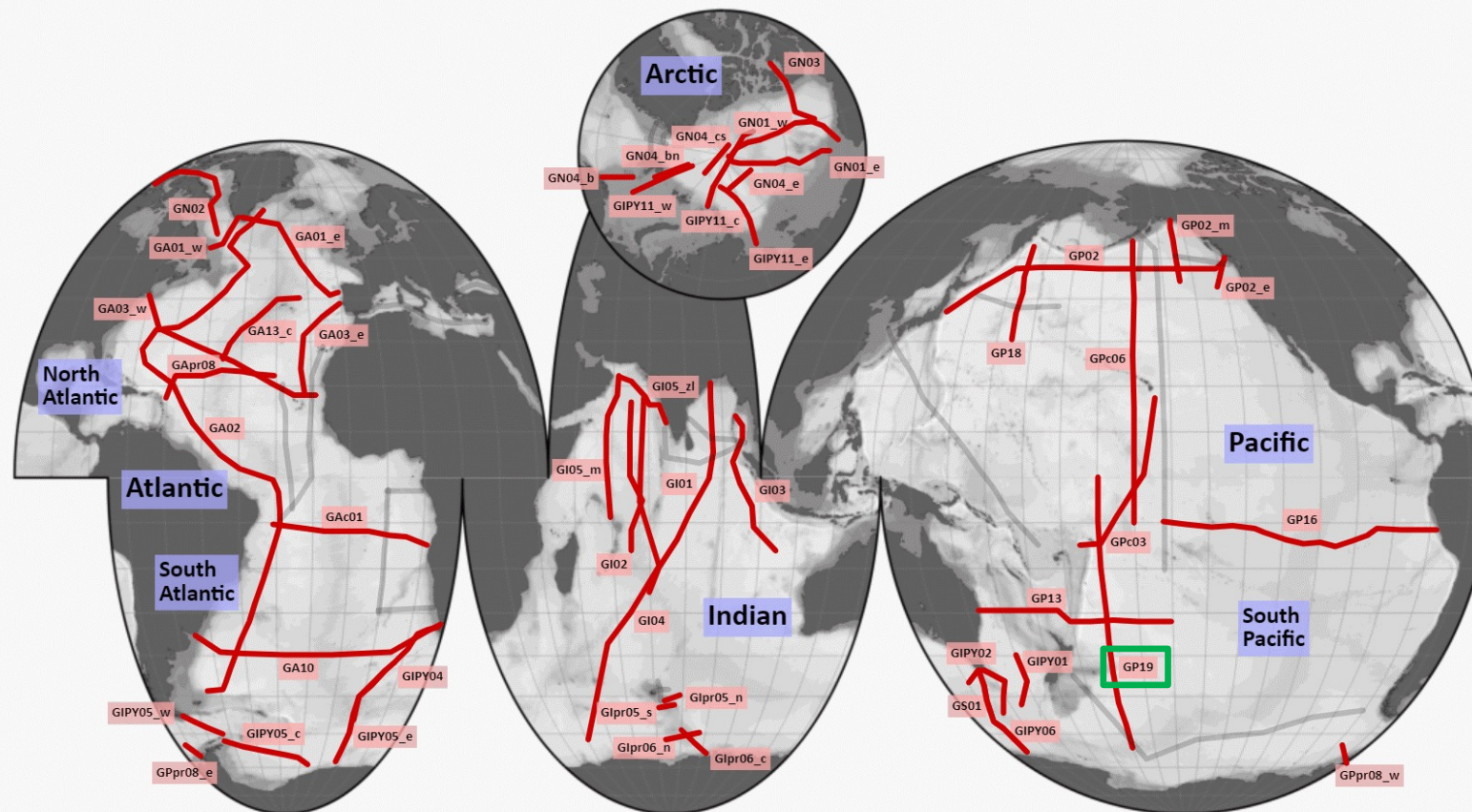
IDP2021\_v1

[Reiner Schlitzer](#), Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany

Select a data group and tracer, then click on a red section or blue basin label to view the tracer distribution along the section or as rotating 3D scene in the basin. Use the links at the bottom of the section and 3D scene pages to access original publications associated with the data or view other tracer plots along other sections or in other basins.

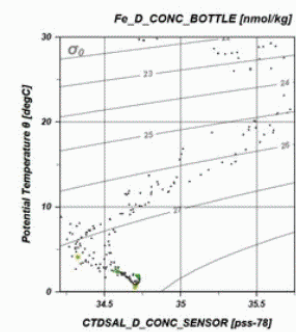
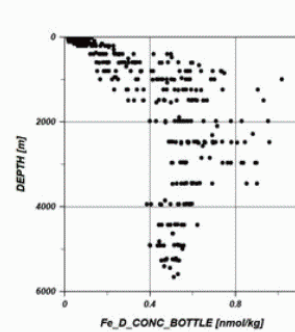
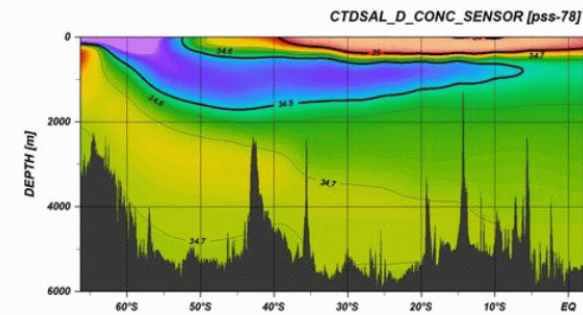
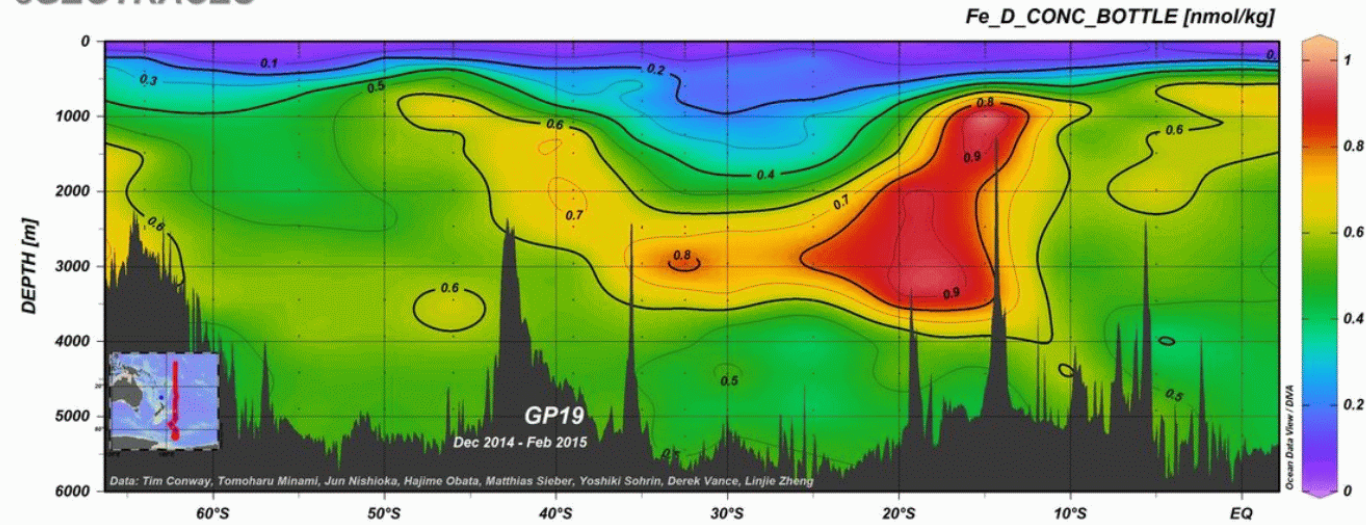
Dissolved Trace Elements

[About eGEOTRACES](#) | [Fair Data Use Statement](#) | [Naming Conventions](#) | [Known Issues](#) | [Data Access](#) | [Publications](#)



1463 sections  
269 3D scenes

eGEOTRACES



© 2021 Reiner Schlitzer, Alfred Wegener Institute, Bremerhaven, Germany

**Description:** Concentration of dissolved Fe.

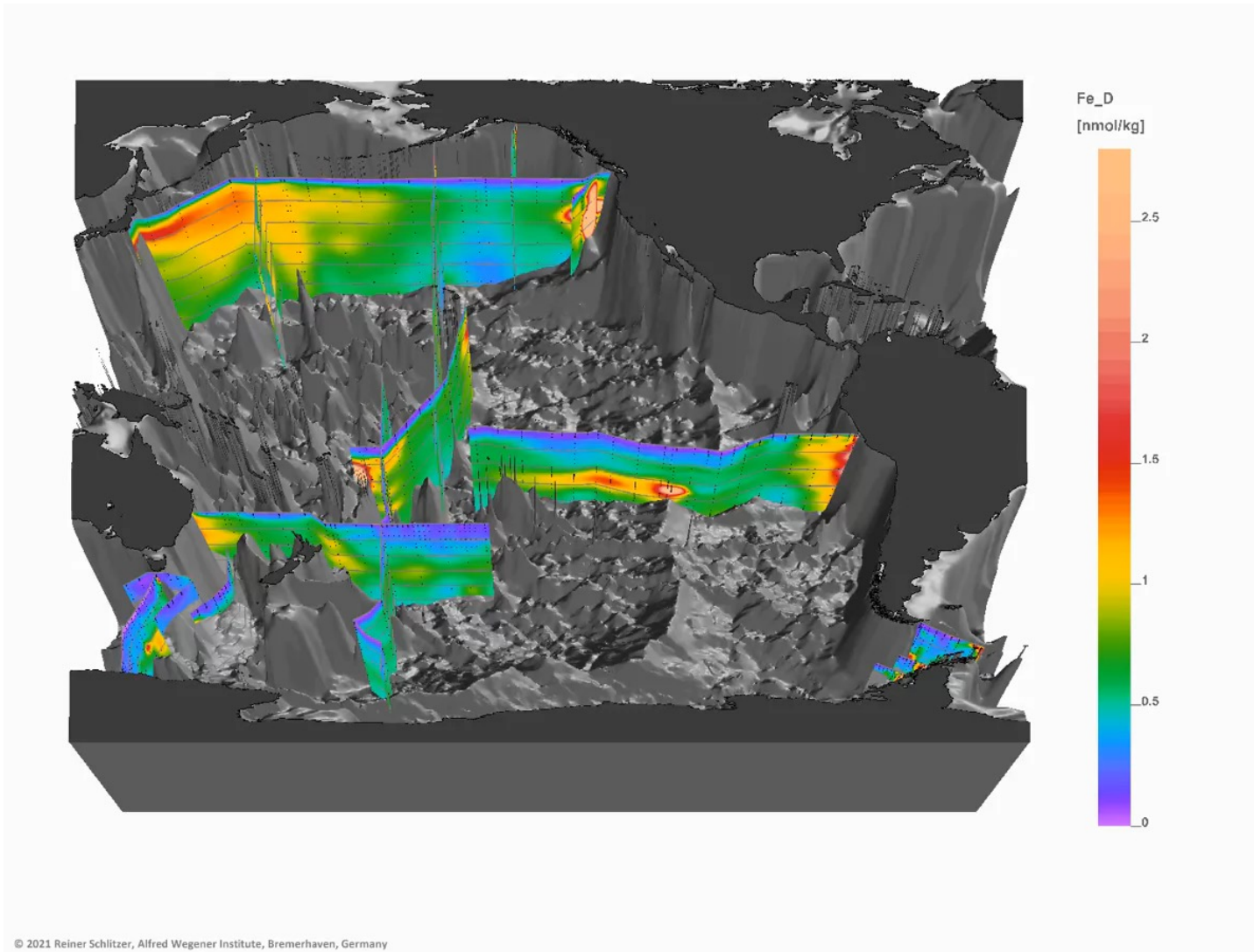
**Data creators:** Tim Conway | Tomoharu Minami | Jun Nishioka | Hajime Obata | Matthias Sieber | Yoshiki Sohrin | Derek Vance | Linjie Zheng

**Other tracers along this section:** [Al dissolved](#) | [Cd dissolved](#) | [CTDSAL](#) | [Cu dissolved](#) | [delta Cd\\_114\\_110](#) | [delta Fe\\_56\\_54](#) | [Mn dissolved](#) | [Ni dissolved](#) | [NO2+NO3](#) | [Oxygen \(CTD\)](#) | [Pb dissolved](#) | [Phosphate](#) | [Potential Temperature](#) | [Silicate](#) | [Zn dissolved](#)

**Other sections with this tracer:** [GA01\\_e](#) | [GA01\\_w](#) | [GA02](#) | [GA03\\_e](#) | [GA03\\_w](#) | [GA10](#) | [GA13\\_c](#) | [GAc01](#) | [GApr08](#) | [GI01](#) | [GI02](#) | [GI03](#) | [GI04](#) | [GI05\\_m](#) | [GI05\\_m](#) | [GI05\\_m](#) | [GI05\\_m](#) | [GI05\\_zl](#) | [GIPY01](#) | [GIPY02](#) | [GIPY04](#) | [GIPY05\\_c](#) | [GIPY05\\_e](#) | [GIPY05\\_w](#) | [GIPY06](#) | [GIPY11\\_c](#) | [GIPY11\\_e](#) | [GIPY11\\_w](#) | [Glpr05\\_n](#) | [Glpr05\\_s](#) | [Glpr06\\_c](#) | [Glpr06\\_n](#) | [GN01\\_e](#) | [GN01\\_w](#) | [GN02](#) | [GN03](#) | [GN04\\_b](#) | [GN04\\_bn](#) | [GN04\\_cs](#) | [GN04\\_e](#) | [GP02](#) | [GP02\\_e](#) | [GP02\\_m](#) | [GP13](#) | [GP16](#) | [GP18](#) | [GPc03](#) | [GPc06](#) | [GPpr08\\_e](#) | [GPpr08\\_w](#) | [GS01](#)

**3D scenes with this tracer:** [Arctic](#) | [Atlantic](#) | [Indian Ocean](#) | [North Atlantic](#) | [Pacific](#) | [South Atlantic](#) | [South Pacific](#)

**Publications for this tracer:** [GP19](#)



# IDP2021SUMMARY

**Contains exciting new data and visuals.**

**Next: Ways of accessing the IDP2021.**



# IDP2021 DATA ACCESS

- 1 **Bulk (full packages) download**
- 2 **Online subsetting and extraction**
- 3 **Online analysis and visualization**

**New:** Agreement to the **IDP2021 Fair Data Use Statement** is required, but registration and login are no longer necessary.

# IDP2021 BULK DOWNLOAD

[www.bodc.ac.uk/geotraces/data/idp2021/](http://www.bodc.ac.uk/geotraces/data/idp2021/)

## Five Packages:

Seawater Discrete Sample Data

Seawater Sensor Data

Aerosol Data

Precipitation Data

Cryosphere Data

## Three Formats:

csv ASCII

netCDF

ODV collection

## GEOTRACES Intermediate Data Product 2021 (Version 1)

The GEOTRACES Intermediate Data Product 2021 (IDP2021) is released on 17 November 2021. The IDP2021 represents a major new data release. Compared to IDP2017, IDP2021 improves data coverage significantly in all ocean basins, especially in the Arctic, the Indian and the Pacific Oceans. Overall, the new data product contains more than twice the number of cruises, stations and actual data values.

IDP2021 is, open access data sets, licensed under a Creative Commons Attribution 4.0 International license. Please, read the [Fair Data Use Statement for GEOTRACES IDP2021](#) before using IDP2021.

The original versions of the IDP2021 digital datasets can be accessed from the links below - please use the **current version** of the digital datasets for any current research.

The GEOTRACES IDP2021 consists of two parts:

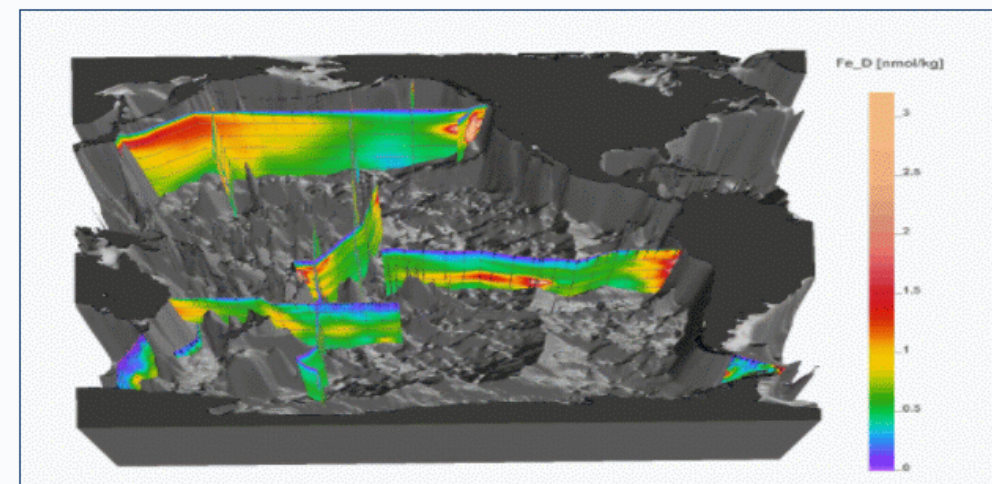
1. the digital datasets — available for download below or as a subset via the [online service](#) hosted by the Alfred Wegener Institute (AWI).
2. the [eGEOTRACES Electronic Atlas](#) — is based on the digital data package and provides section plots (as illustrated below) and animated 3D scenes for many of the parameters. The 3D scenes provide geographical context, which is crucial for correctly assessing extent and origin of tracer plumes as well as for inferring processes acting on the tracers and shaping their distribution.

### IDP2021 digital datasets (original version)

The IDP2021 digital datasets are made available to [DOWNLOAD](#) by the GEOTRACES International Data Assembly Centre hosted by the British Oceanographic Data Centre (BODC). They are provided in 3 data formats: ASCII, NetCDF and ODV collections. The latter is for use with the [Ocean Data View software](#).

If the data sets are used in a presentation or publication then we ask that you acknowledge the source. This should be of the form: GEOTRACES Intermediate Data Product Group (2021). The GEOTRACES Intermediate Data Product 2021 (IDP2021). NERC EDS British Oceanographic Data Centre NOC. [doi:10.5285/cf2d9ba9-d51d-3b7c-e053-8486abc0f5fd](https://doi.org/10.5285/cf2d9ba9-d51d-3b7c-e053-8486abc0f5fd).

Please help us to improve the Intermediate Data Product by [sending us](#) your feedback.



# IDP2021 SUBSETTING AND EXTRACTION

geotraces.webodv.awi.de/

**Select:**  
Cruises  
Domain  
Time range

The screenshot displays the web application interface for geotraces. At the top, there is a navigation bar with links for eGEOTRACES, Publications, Known Issues, Privacy, and Legal Notice. Below this, a breadcrumb trail shows the current path: webODV > geotraces > IDP2021 > GEOTRACES\_IDP2021\_Seawater\_Discrete\_Sample\_Data\_v1.odv. A progress indicator shows four steps: 1. Select Cruises / Domain / Time Range (active), 2. Select variables, 3. Download, and 4. Exit. A helpful tip explains the 'Zoom in', 'Apply', and 'Zoom out' actions. The main interface is divided into several panels:

- CRUISES:** A dropdown menu showing '3 items selected'.
- MAP DOMAIN:** Buttons for 'Zoom mode', 'Zoom out', 'Full range', and 'Global'.
- TIME RANGE:** Fields for 'from:' (01/01/1850) and 'to:' (12/31/2023), each with a calendar icon.
- RESET:** Buttons for 'PAGE' and 'GLOBAL'.
- MAP:** A satellite-style map of the Atlantic Ocean with a blue dashed line indicating the cruise track. The map includes a grid with latitude (20°S, 40°S) and longitude (60°W, 30°W, 0°, 30°E) markers.
- SELECTION STATUS:** A box showing 'Stations: 118 of 3149' and 'Output variables: 8 of 348'.
- EXPORT IMAGE:** A 'Download' button.
- DATA PREVIEW:** A 'Scatter plot' button and a small preview image of a scatter plot.
- SELECTED VARIABLES (OR):** A list of variables including CTDPRS\_T\_VALUE, DEPTH, CDTMP\_T\_VALUE, CTDSAL\_D\_CONC, SALINITY\_D\_CONC, Al\_D\_CONC, Ba\_D\_CONC, and Fe\_D\_CONC.
- STATION INFO:** A table providing details for the selected station.

STATION INFO	
Accession Number	745
Cruise	GA10
Station	24 (B)
Longitude	54°W
Latitude	36°S
Date	26 January 2012

# IDP2021 SUBSETTING AND EXTRACTION

geotraces.webodv.awi.de/

## Select:

Variables (entire groups or individual entries)

The screenshot shows the webODV interface for geotraces data extraction. The top navigation bar includes 'eGEOTRACES', 'Publications', 'Known Issues', 'Privacy | Legal Notice', 'webODV', and the breadcrumb 'geotraces > IDP2021 > GEOTRACES\_IDP2021\_Seawater\_Discrete\_Sample\_Data\_v1.odv'. A progress bar at the top indicates the current step: '2. Select variables'. Below this, a map of the Atlantic Ocean shows the cruise track. The main interface is divided into three panels: 'LOGIC' (with 'OR' selected), 'TREEVIEW' (with 'Collapse all', 'Expand all', 'Check all', and 'Uncheck all' buttons), and 'RESET' (with a 'Global' button). The 'VARIABLES' panel shows a search bar and a list of variable groups: 'Seawater-Hydrography and Inert Gases', 'Seawater-Biogeochemistry', 'Seawater-Nutrient and Water Isotopes', and 'Seawater-Dissolved, total dissolvable and total trace elements'. Under the last group, several variables are listed with checkboxes, including 'Al\_D\_CONC', 'Ba\_D\_CONC', 'Fe\_D\_CONC', and others. The right panel shows 'SELECTION STATUS' (118 of 3149 Stations, 8 of 348 Output variables), 'DATA PREVIEW' (Scatter plot), and 'SELECTED VARIABLES ( OR )' (listing variables like CTDPRS\_T\_VALUE, DEPTH, CTDTMP\_T\_VALUE, etc.).

# IDP2021 SUBSETTING AND EXTRACTION

[geotraces.webodv.awi.de/](http://geotraces.webodv.awi.de/)

## Select:

Output format

## Receive:

Data subset as zip file

The screenshot shows the webODV interface for GEOTRACES data extraction. The top navigation bar includes links for eGEOTRACES, Publications, Known Issues, Privacy, and Legal Notice. The breadcrumb trail indicates the current path: webODV > geotraces > IDP2021 > GEOTRACES\_IDP2021\_Seawater\_Discrete\_Sample\_Data\_v1.odv. A progress bar at the top shows four steps: 1. Select Cruises / Domain / Time Range, 2. Select variables, 3. Download (highlighted), and 4. Exit. Below the progress bar, a message reads "Download data in different formats." On the left, there are two sections: "DOWNLOAD" with buttons for "ASCII Spreadsheet (.txt)", "ODV Collection (.odv)", and "netCDF (.nc)", and "RESET" with a button for "Global". The central area features a map of the Atlantic Ocean with a blue dashed line representing the cruise track. On the right, there are three sections: "SELECTION STATUS" showing "Stations: 118 of 3149" and "Output variables: 8 of 348"; "DATA PREVIEW" with a "Scatter plot" button and a small plot; and "SELECTED VARIABLES ( OR )" with a list of variables including CTDPRS\_T\_VALUE, DEPTH, CTDTMP\_T\_VALUE, CTDSAL\_D\_CONC, SALINITY\_D\_CONC, Al\_D\_CONC, Ba\_D\_CONC, and Fe\_D\_CONC. The bottom footer contains the copyright notice "© webODV 2017-2021".

# IDP2021 ONLINE ANALYSIS AND VISUALIZATION

[geotraces.webodv.awi.de/](https://geotraces.webodv.awi.de/) or [explore.webodv.awi.de/](https://explore.webodv.awi.de/)



webODV

## Explore

This site lets you explore many popular environmental datasets using the *ODV-online* browser tool. If you have used the *Ocean Data View* software before you will feel at home instantly. If you are a new user see the [ODV-online help document](#) or the [ODV documents](#). By using this site, you consent to our [Usage Agreement](#).

Browse the tree structures below, rest the mouse over a dataset for a brief description, click on a dataset to open the dataset in a separate browser tab. Return to this page to select another dataset. Once a dataset is open, you obtain more information about the dataset via the *Collection* menu. Note that the *ocean/carbon/socat* dataset is very large and may take a while to start up. Most other datasets are ready almost instantly.

Alternatively, view the [dataset summary list](#) and open a dataset by clicking on the respective link.

### Ocean

- › optics
- › sea-level
- ~ tracer
  - › del13c
  - › geosecs
  - ~ geotraces
    - ~ idp2021
      - › aerosols
      - › cryosphere
      - › precipitation
      - ~ seawater
        - GEOTRACES\_IDP2021\_Seawater\_Discrete\_Sample\_Da
      - › sensor
    - › tritium-helium
    - › whp-bottle
  - › woa18

### Atmosphere

- › meteorology
- › radiosonde

### Ice

- › vostok

### Rivers

- › discharge

### Sediment

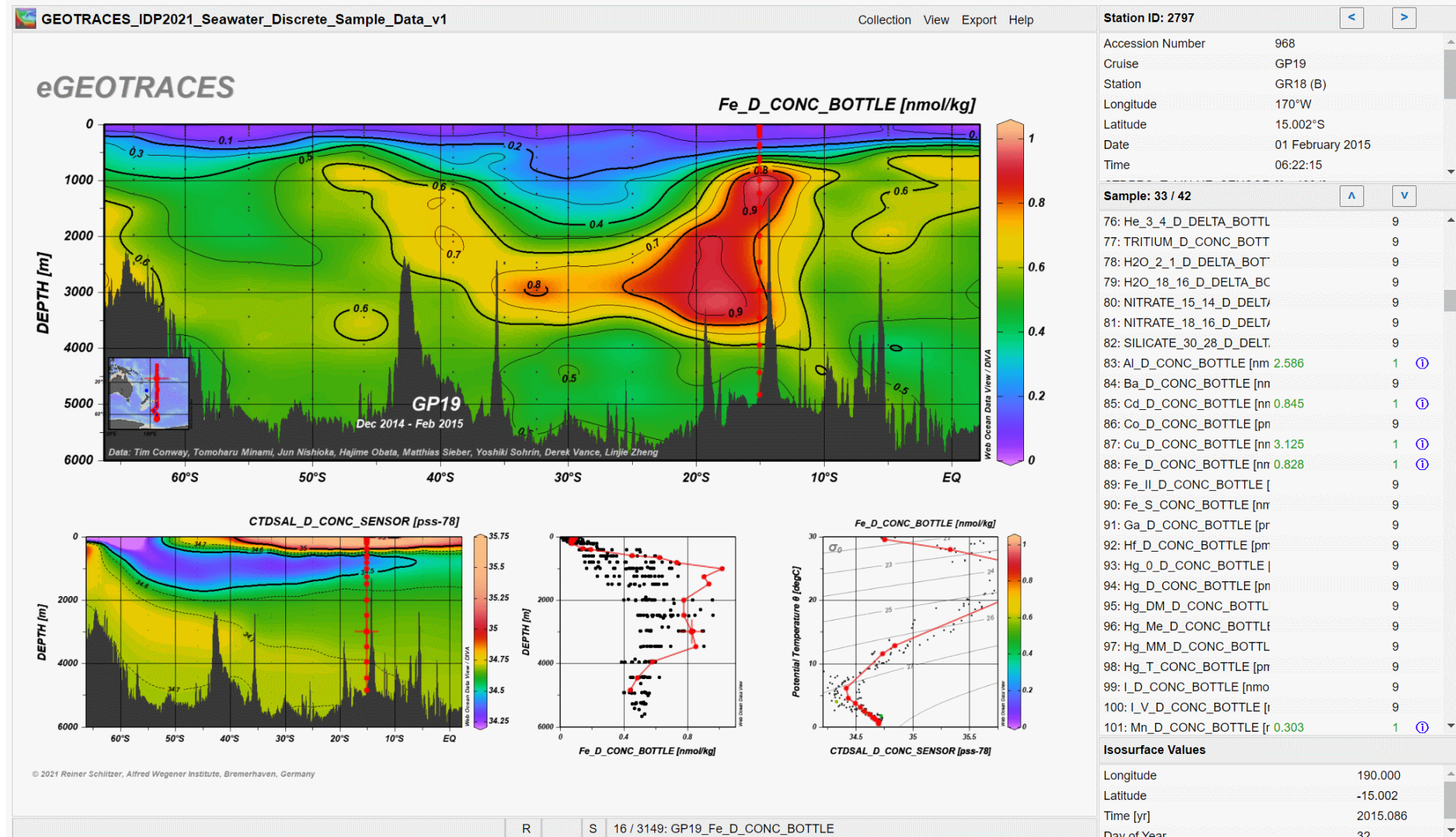
- › core-top

# IDP2021 ONLINE ANALYSIS AND VISUALIZATION

[geotraces.webodv.awi.de/](http://geotraces.webodv.awi.de/) or [explore.webodv.awi.de/](http://explore.webodv.awi.de/)

## Features:

- ODV-like interface
- All eGEOTRACES section views
- No data download or software installation needed



# SUMMARY

**IDP2021 is an exciting new resource.**

**Use it for your research, teaching or outreach activities.**