

Intercalibration Procedures required for GEOTRACES Cruises with Crossover Stations

These actions are required by all data generators/analysts affiliated with GEOTRACES Cruises before data are considered intercalibrated and can be part of GEOTRACES data products. Exceptions to these policies require approval of the GEOTRACES Standards and Intercalibration Committee.

1. Contact corresponding data generator/analyst on the cruise that crosses your cruise track, the crossover station (seek name from Chief Scientist if you do not know the analyst; a list of all cruises and chief scientists is available on the GEOTRACES Data Assembly Centre website, <http://www.bodc.ac.uk/geotraces/>)
2. Analysts will exchange data and details of analytical protocols with one another for the crossover station. Exchange of data for other nearby stations would also be helpful.
3. At the same time, data for at least the crossover stations will be sent to the GEOTRACES Data Assembly Centre, geotraces.dac@bodc.ac.uk.
4. Plot data against depth and density, keeping in mind that surface data suffers from temporal variations.
5. Examine crossover data taking into account (i) Certified Reference Materials (CRMs) data from the two labs involved (e.g., SAFe and /or GEOTRACES reference seawater, GoShip protocols for nutrient CRMs, CRMs for particulate analyses) and (ii) the use of isotope double spikes where appropriate.
6. Produce a report on the intercalibration process stating what the level of agreement is between datasets, and whether any changes (e.g., recalibration) were required to one or both datasets/methods to bring data into agreement. This report must be sent to the co-chairs of the GEOTRACES Standards & Intercalibration committee, sic@geotraces.org. One potential issue to consider is whether the TEI data at the crossover station is anomalous relative to other stations on the transect, perhaps due to a transient event at the station (e.g., hydrothermal plume) or analytical problem. In this report please provide all metadata, which should include sampling methodology/handling details, overall precision and accuracy results, details about calibration and blanking, and subsequent data processing. Recoveries of CRM's or consensus reference materials (e.g., SAFe and /or GEOTRACES) appropriate for selected TEIs should also be reported.

The co-chairs will then send the Report to the full Standards & Intercalibration Committee for discussion, and a report will be sent back to the analysts from the Standards & Intercalibration Committee outlining their assessment:

- (i) Data are deemed to be intercalibrated or
- (ii) More work is needed; advice will be provided on how this may be achieved in consultation with the analysts

Please respond to all e-mails from the Standards & Intercalibration Committee so that it is aware of progress with intercalibration.

Before the next GEOTRACES Intermediate Data Product is created, all data generators/analysts of successfully intercalibrated data will receive an e-mail from the Data Management Committee requesting permission for their data to be included in that product (although there is no obligation for intercalibrated data to be included in that product).