



Network Training Activity 3, NHM (London)



Geochemical proxies calibration along the Indonesian Throughflow (ITF) pathway.

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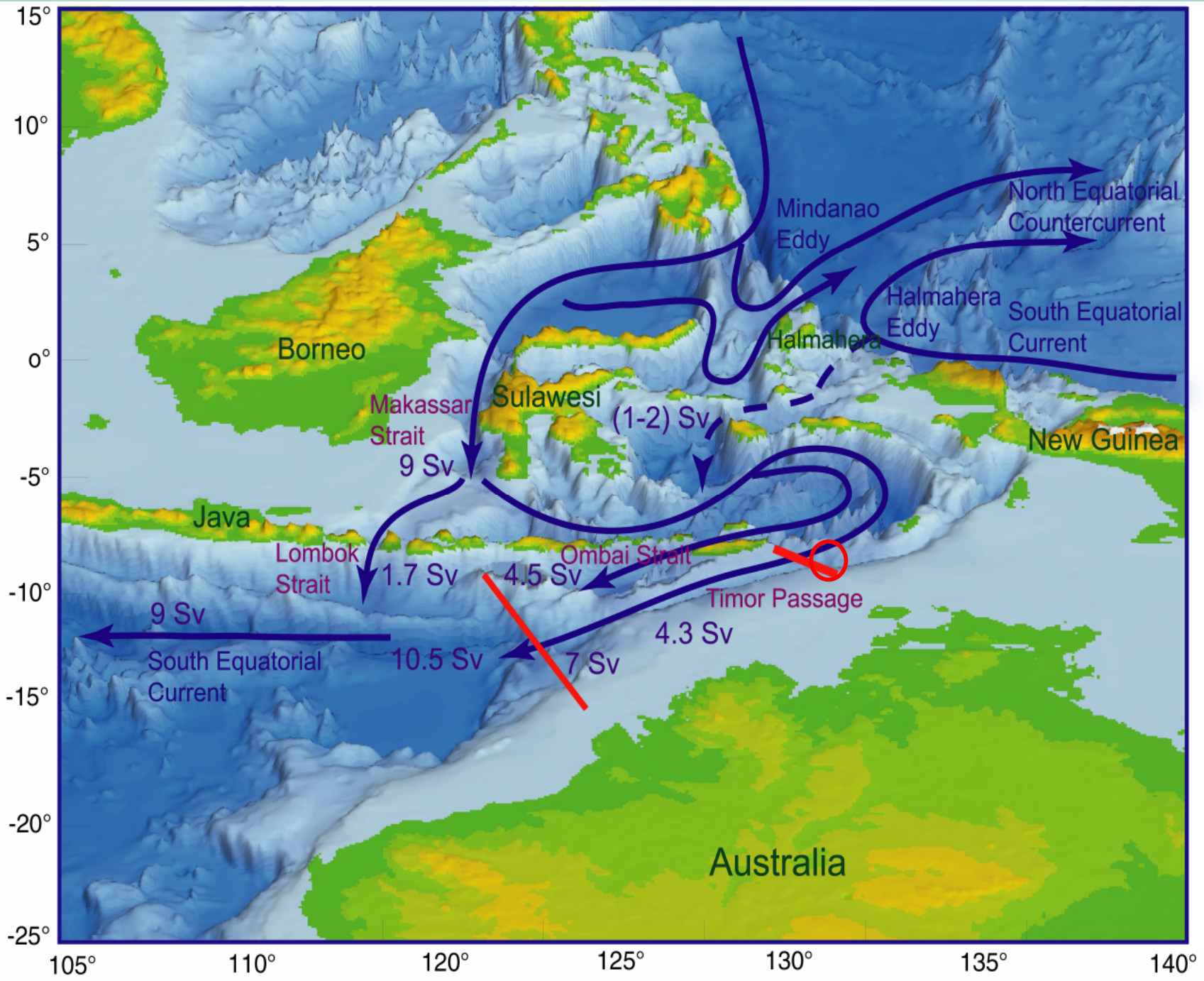
Overview

- Accomplished work
- Preliminary results
- Work in progress
- Eventual publications
- Future plans

Accomplished work



Collection of about 150 clay-rich sediment samples during the Network Training Activity 2, November - December 2010.

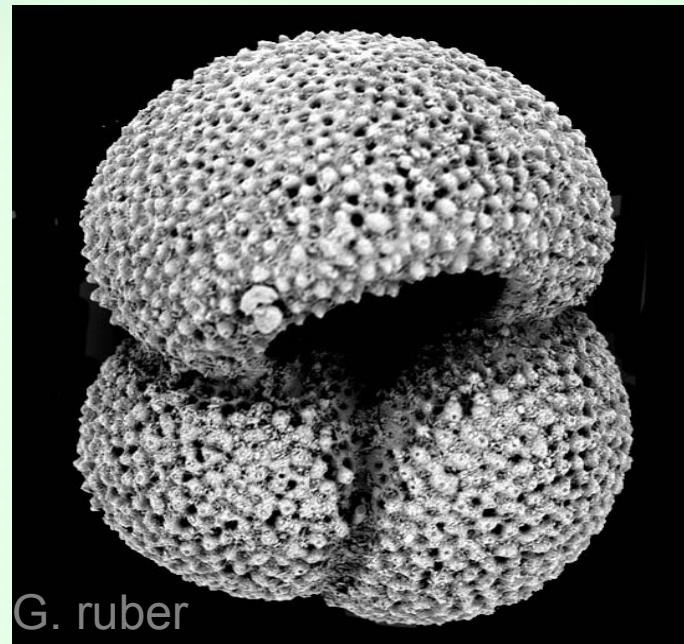


Accomplished work



- 1 cm thick sediment slices were sampled on a 10 cm interval along the core.
- Samples were dried at 40°C and weighed, then washed over a 63 μm sieve.
- Residues were dried on a sheet of filter paper and weighed, then sieved into 63 - 150 μm , 150 - 250 μm , 250 - 315 μm , > 315 μm .

Accomplished work



Accelerator mass spectrometry (AMS) ^{14}C dating: approximately 2400 well preserved shells of the planktonic foraminifera *Globigerinoides ruber* were picked from the $> 250 \mu\text{m}$ fraction at the top core, at 1 m and at 2 m depth.

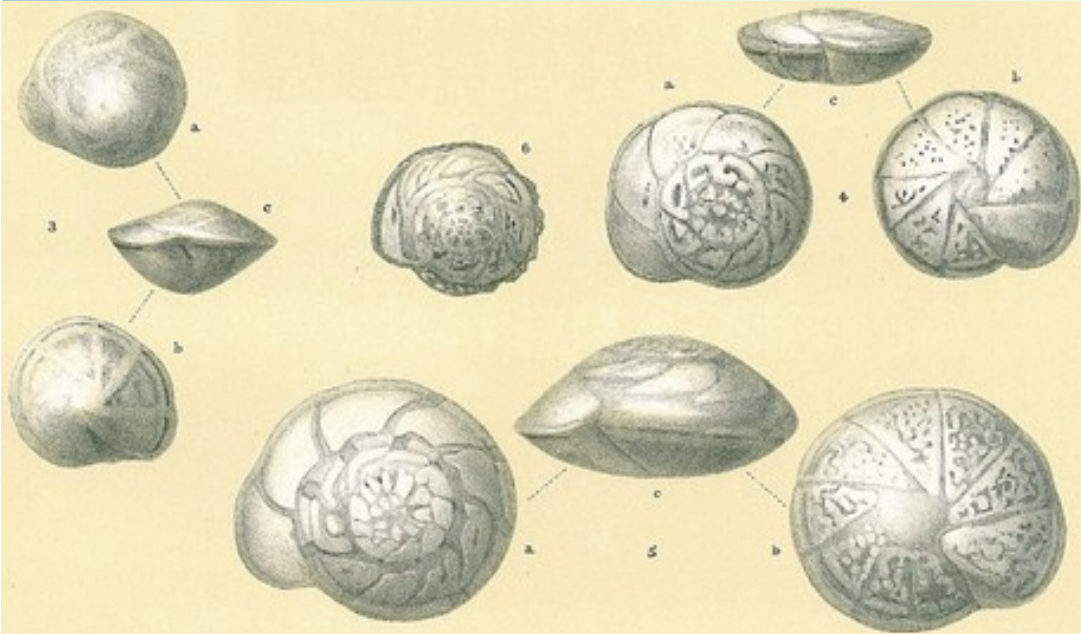
Preliminary results

	Probenname	Probenangabe	C-Menge für Analyse (mg)	PMC (korrigiert)†	Radiokarbonalter	$\delta^{13}\text{C}(\text{‰})\ddagger$
KIA 43869	18471-2 ; 0 - 1 cm	<i>G. ruber</i> , Timor Strait	1,4	77,50 ± 0,24	2045 ± 25 BP	-0,63 ± 0,18
KIA 43870	18471-2 ; 100 - 101 cm	<i>G. ruber</i> , Timor Strait	1,2	11,95 ± 0,14	17060 ± 90 BP	1,33 ± 0,15
KIA 43871	18471-2 ; 200 - 201 cm	<i>G. ruber</i> , Timor Strait	1,1	4,12 ± 0,11	25620 + 230 / -220 BP	1,45 ± 0,15

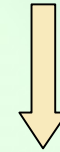
AMS results reveal an unexpected low sedimentation rate along the core and it implies that:

- the resolution in the upper part of the core won't be good enough to focus our studies exclusively on the Holocene;
- an orbital scale approach will allow us to go really back in time according with the length of the record (13.5 m).

Work in progress



Hoeglundina elegans

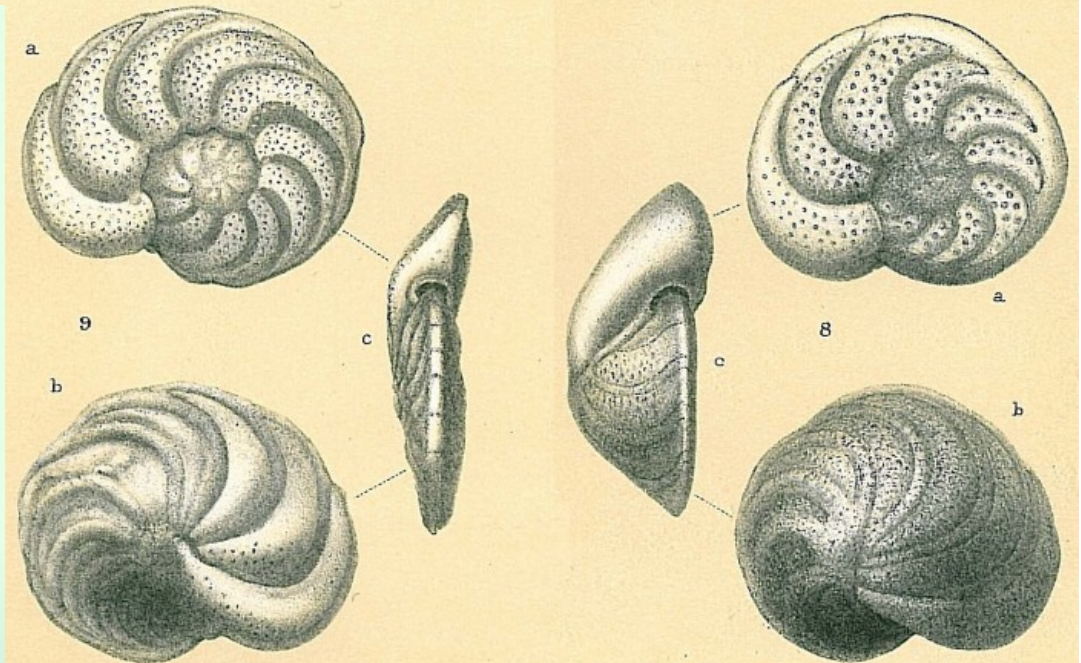


Mg/Ca

Cibicidoides wuellerstorfi



Stable isotopes and
Mg/Ca



Eventual publications

Geochemical proxy calibration using different species of small benthic foraminifera:

- Parallel Mg/Ca analysis using *Cibicidoides wuellerstorfi* and *Hoeglundina elegans*.
- Parallel stable isotopes analysis using two species of *Cibicidoides*: *wuellerstorfi* and *refulgens*.

Compare results and verify the possibility to use different foraminifera for the same analysis according with their abundance in the samples.

Future plans

- Try to identify the last termination and stage 5 and 6 improving the sampling resolution up to a 2 cm interval in the first 2 m of the core. Compare results with others already available.
- XRF core scanning of the upper 4 m to detect monsoons and precipitation influence on the sedimentation rate and to identify the salinity signal linked with glacial cycles.
- Network Training Activity 4, June - July 2011, East Kalimantan.
- Oceanographic cruise on board the Research Vessel “Sonne”, July - August 2011, Makassar Strait.



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THANK YOU!



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