

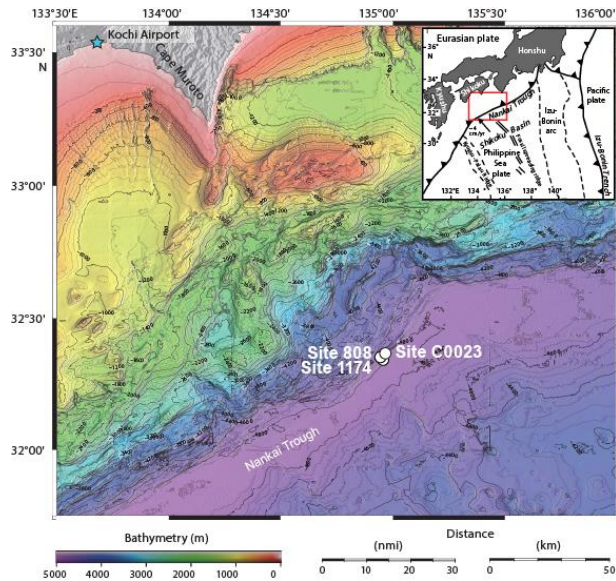
Paleomagnetic and rock magnetic investigation in marine sediments, Nankai Trough, offshore Cape Muroto

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<https://doi.org/10.5194/egusphere-egu2020-12655>

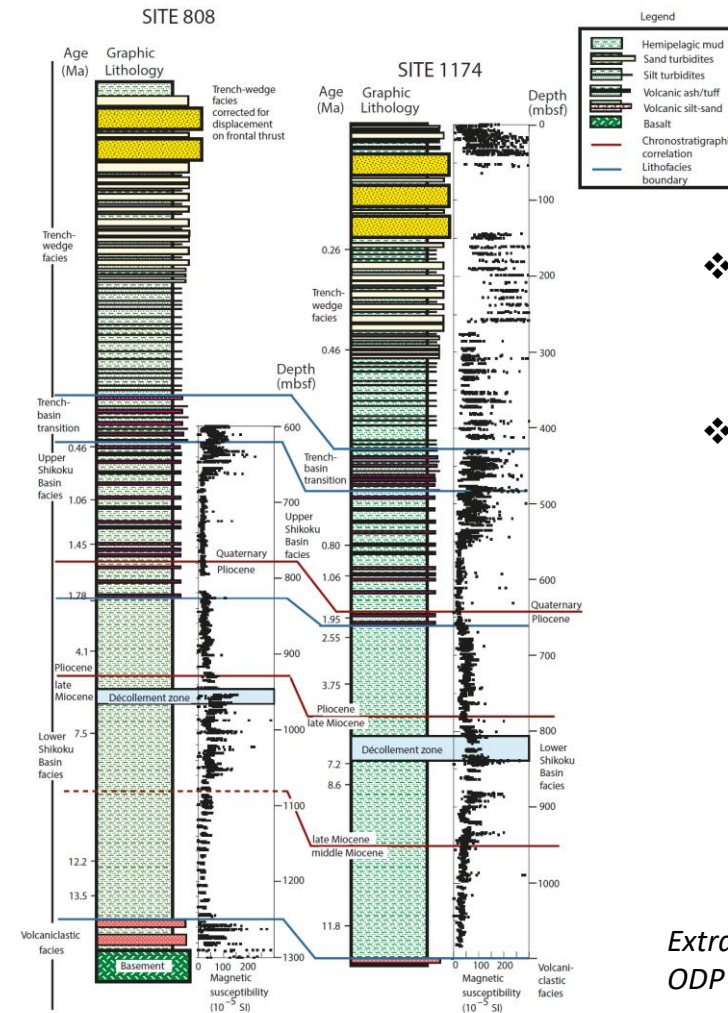
1. Location



(map modified after Heuer et al., 2017, IODP Proceedings vol. 370)

- ❖ Study sites are located in the prot thrust zone of the Nankai Trough, Japan, NW Pacific Ocean.
 - Site 808 of ODP Leg 131 (Taira et al., 1991, ODP Proceedings vol. 131)
 - Site 1174 of ODP Leg 190 (Moore et al., 2001, ODP Proceedings vol. 190)

2. Lithology and shipboard magnetic susceptibility

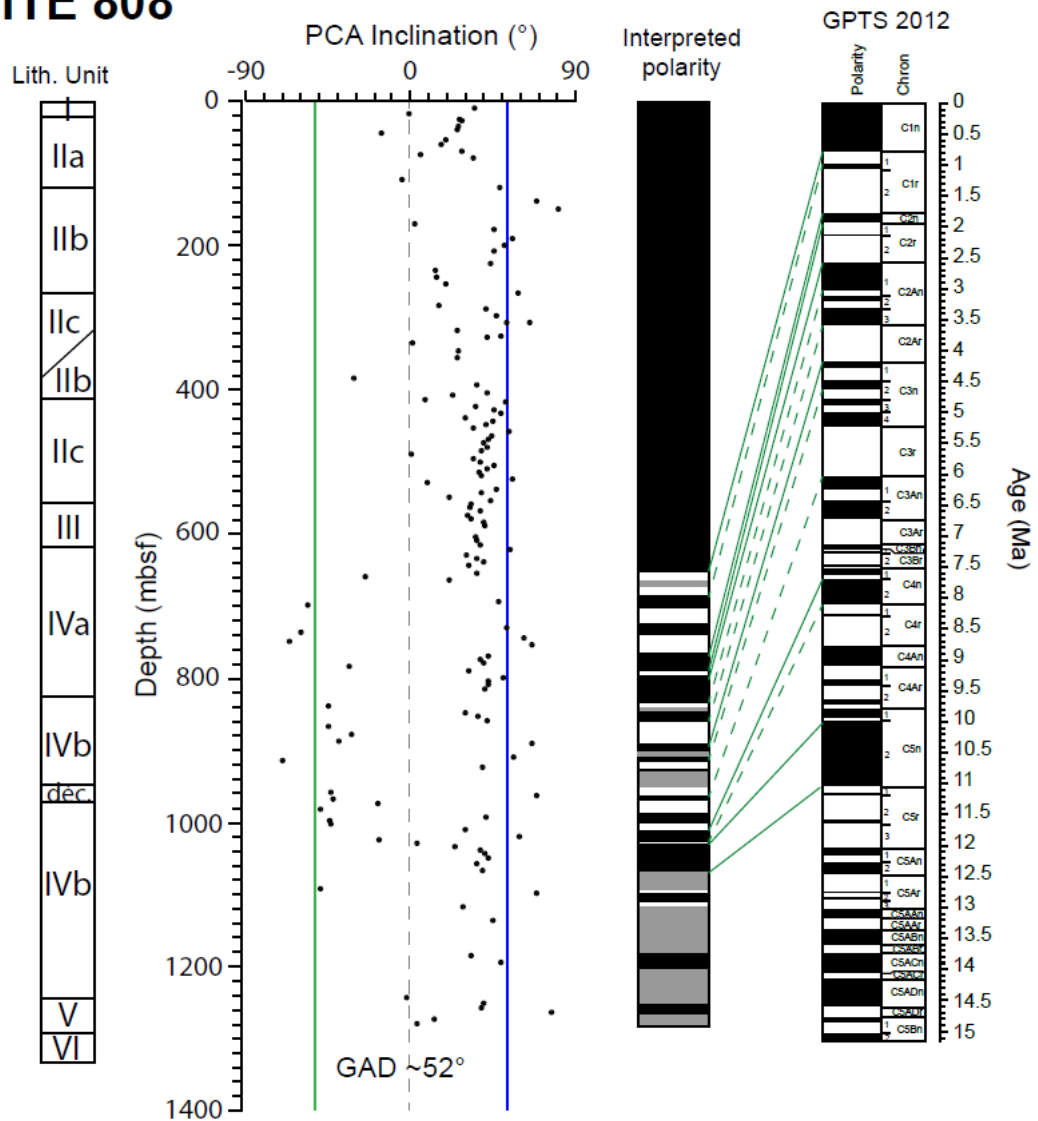


- ❖ Lithologic correlation between sites
- ❖ Similar downcore variations of magnetic susceptibility

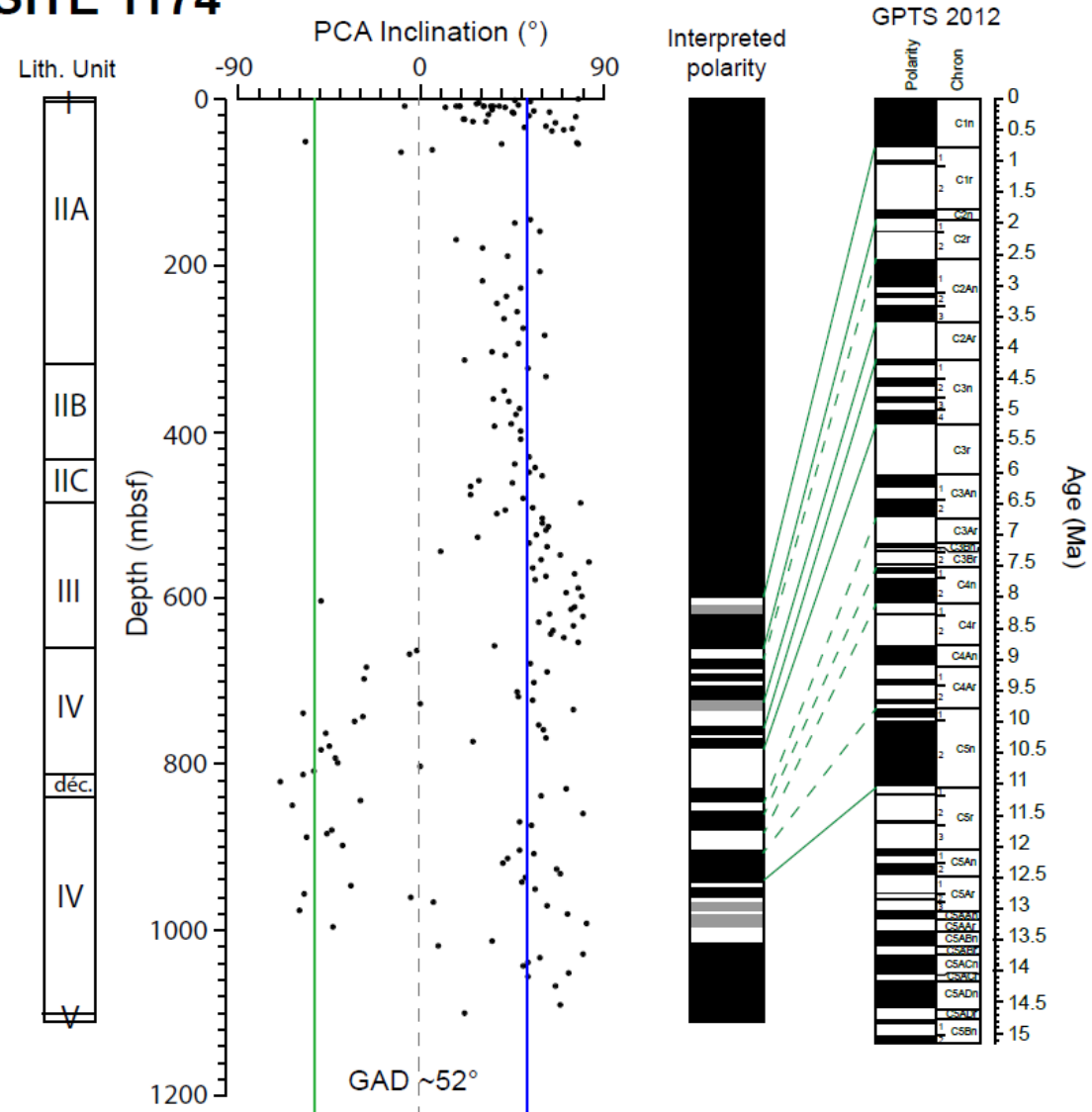
Extracted from Moore et al., 2001, ODP Proceedings vol. 190

3. Tentative new magnetostratigraphy

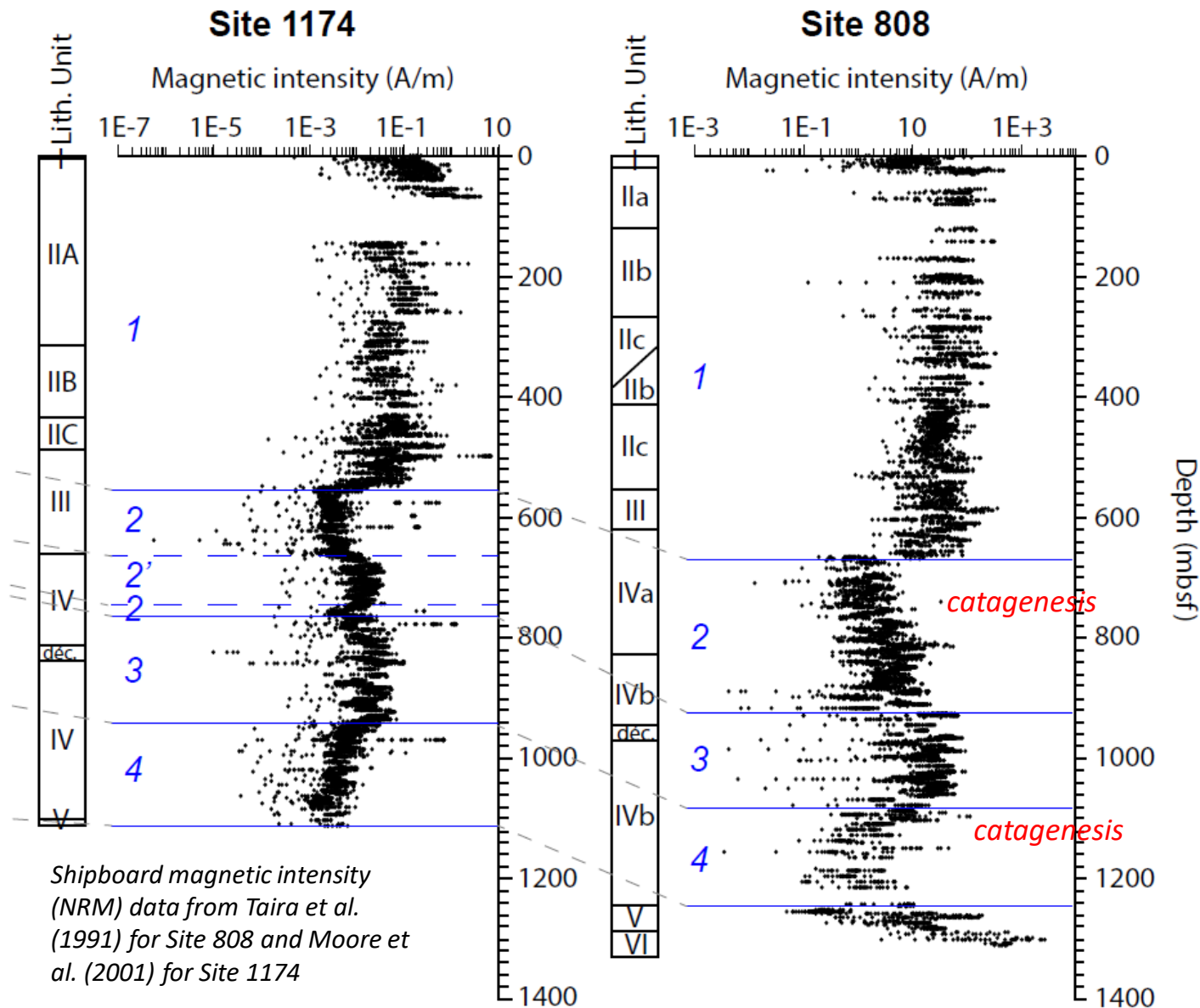
SITE 808



SITE 1174



4. Magnetic zones and correlation between sites



❖ Four magnetic zones based on NRM downcore variations:

- Zone 1 : high intensity zone
- Zone 2: low intensity zone (small interval with higher values is called Zone 2')
- Zone 3: high intensity zone
- Zone 4: low intensity zone

❖ Catagenesis has been proposed as the mechanism responsible for lower remanence, lower magnetic mineral contents in Zones 2 and 4 at Site 808 (*Lu & Banerjee, 1994, JGR*)

❖ Abiotic thermal degradation of organic matter where deep biosphere exists at Site 1174 (*Horsfield et al., 2006, EPSL*)

↳ Abiotically driven degradation reactions can provide substrates for microbial activity

Are there other processes responsible for the downcore rock magnetic variations?

Acknowledgements: JSPS Kakenhi, DAAD Rise Worldwide, ODP/IODP