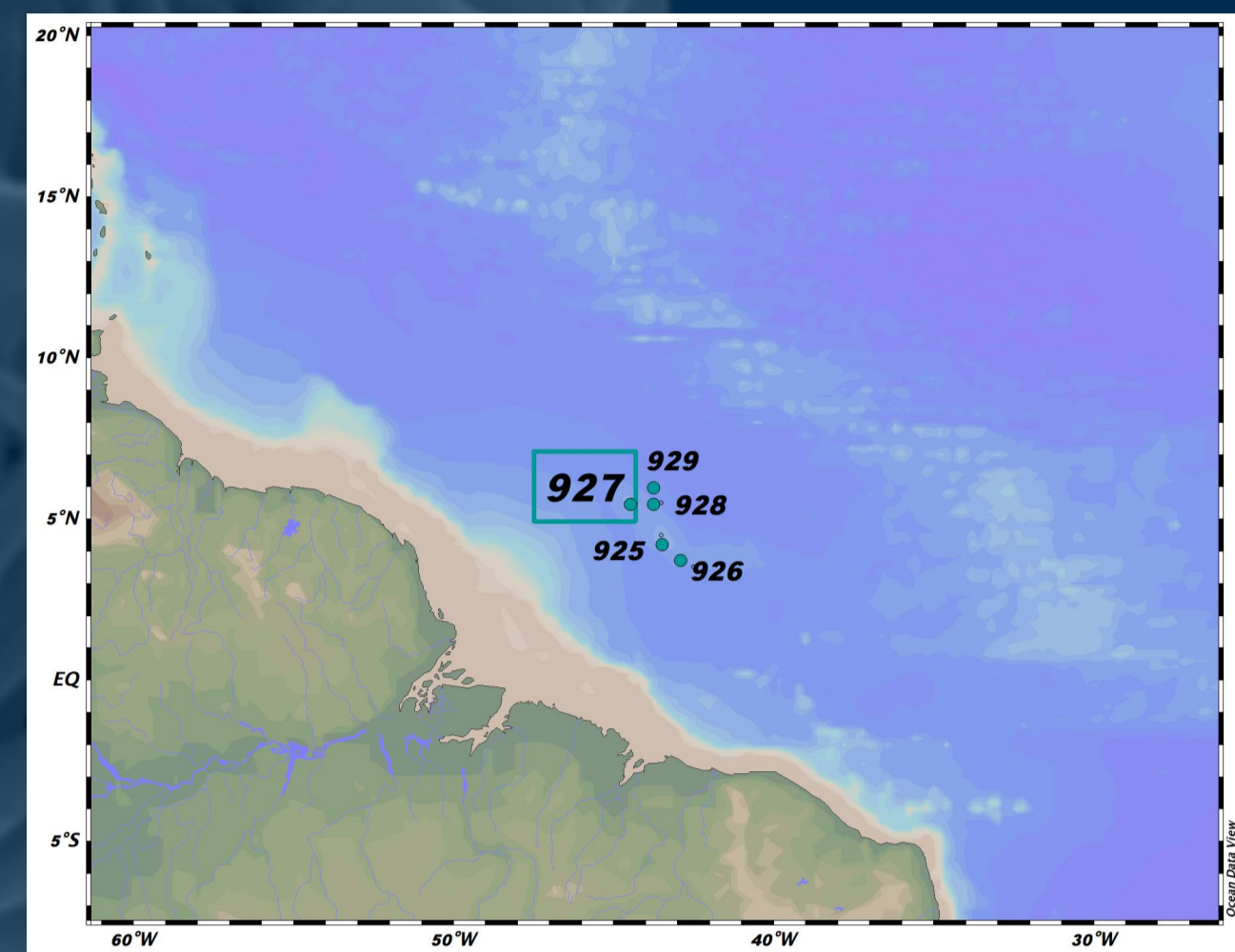
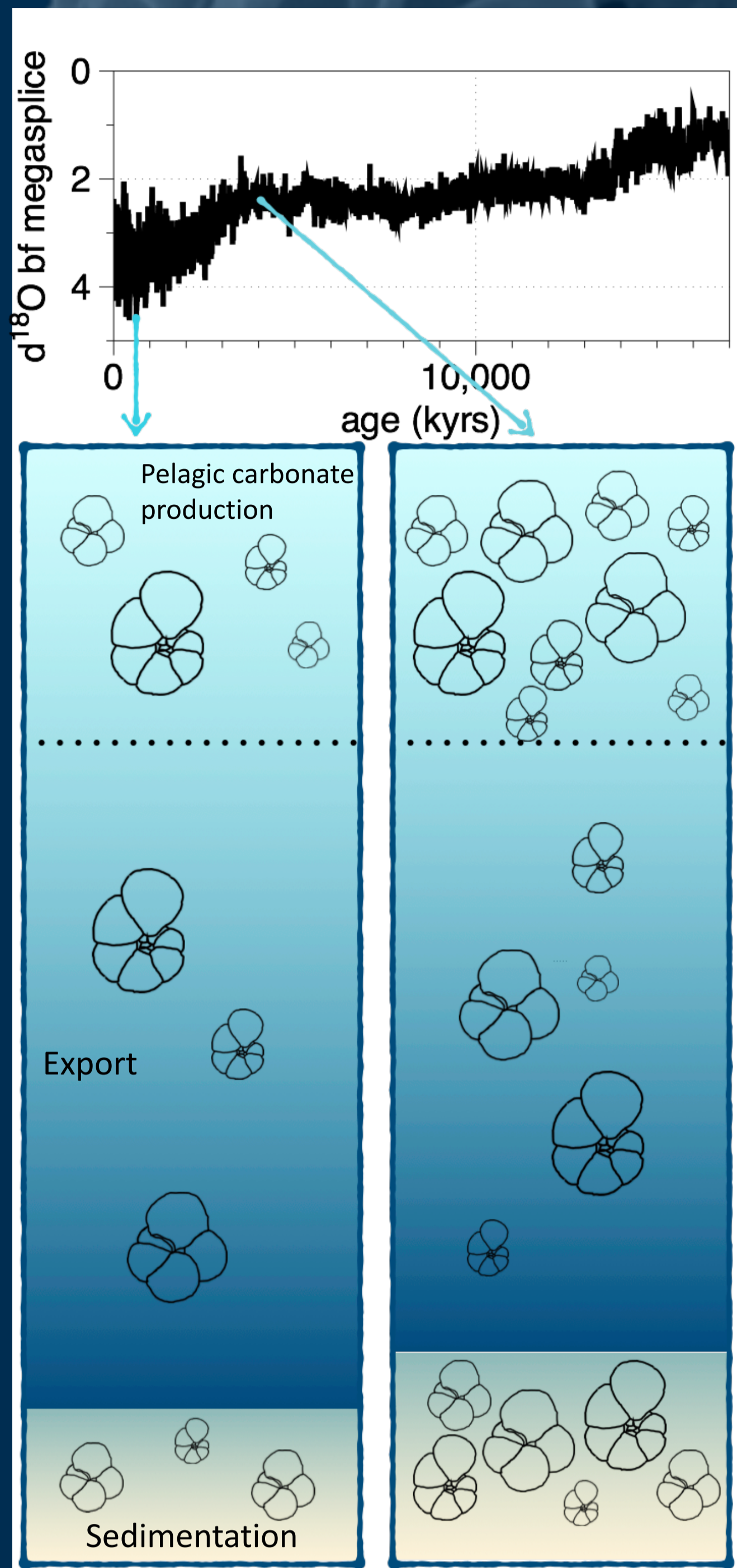


Nature and origin of variations in pelagic carbonate production at Ceara Rise since the Early Miocene

Pauline Cornuault¹, Michal Kucera¹, Heiko Pälike¹, Thomas Westerhold¹, Torsten Bickert¹, Karl-Heinz Baumann²

CaCO₃ pelagic production reflected by accumulation rate

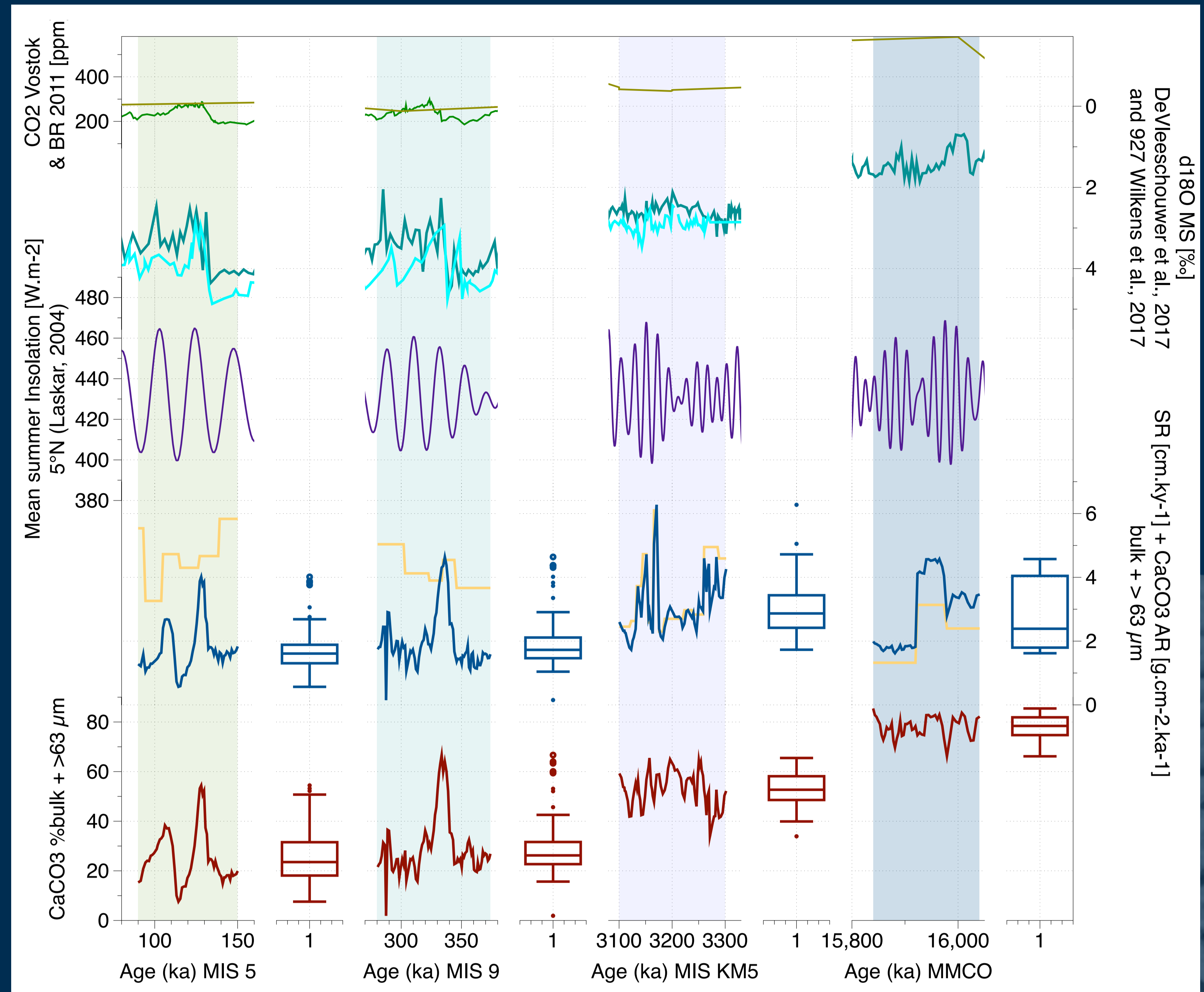


Location of the Leg 154 site, with the studied core highlighted (ODV)

Pelagic carbonate production has changed in the recent Earth history. Understanding how and why it has varied in the past - especially during warm periods - is necessary to constrain the future.

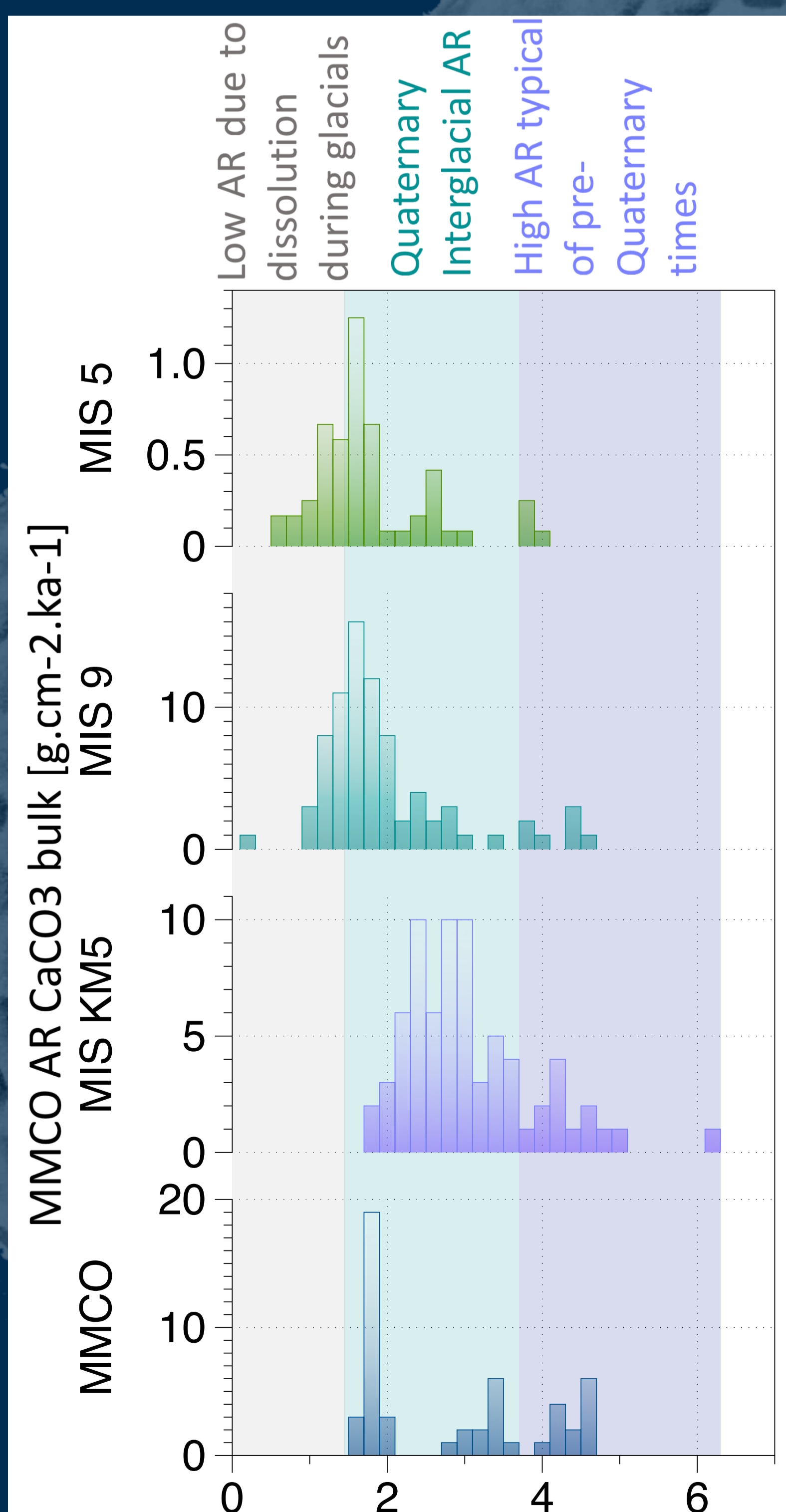
Four periods - MIS 5, MIS 9, MIS KM5 and MMCO - high resolution records have been generated from the very well preserved sediment at the ODP Site 927.

Pelagic carbonate production has varied through time, but the exact relationship of it with the mean climate state remains unclear.



CaCO₃ accumulation rate record and different environmental parameters for the four period of interest

Interpretation - Conclusion

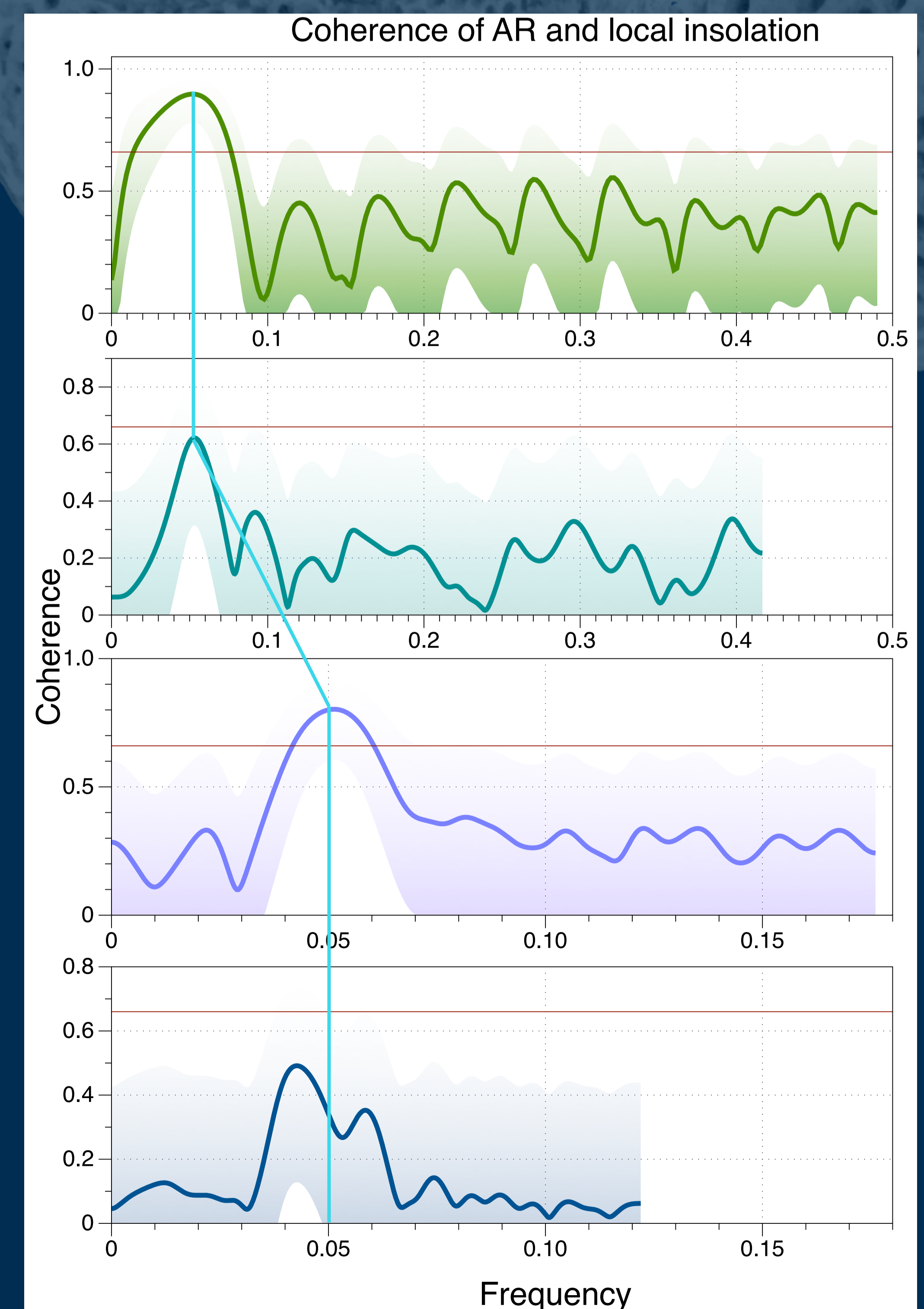


Histogram of the bulk CaCO₃ accumulation rate (AR) for each period

CaCO₃ accumulation rate low during the Pleistocene glacials due to dissolution but no dissolution during the interglacials and ante-Quaternary.

Overall, CaCO₃ accumulation rate is decreasing since the Early Miocene.

On orbital scale, variation in CaCO₃ accumulation rate is correlated with significant coherence at the precession band, this means that the accumulation rate is reflecting the mean insolation at 5°N for all the periods.



Cross Blakmann-Tukey correlation between CaCO₃ accumulation rate and local insolation signal.