

Marine mollusk shells record the seasonal variations of temperature during the Mid Eocene Climatic Optimum in the Paris Basin

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Co-Authors:

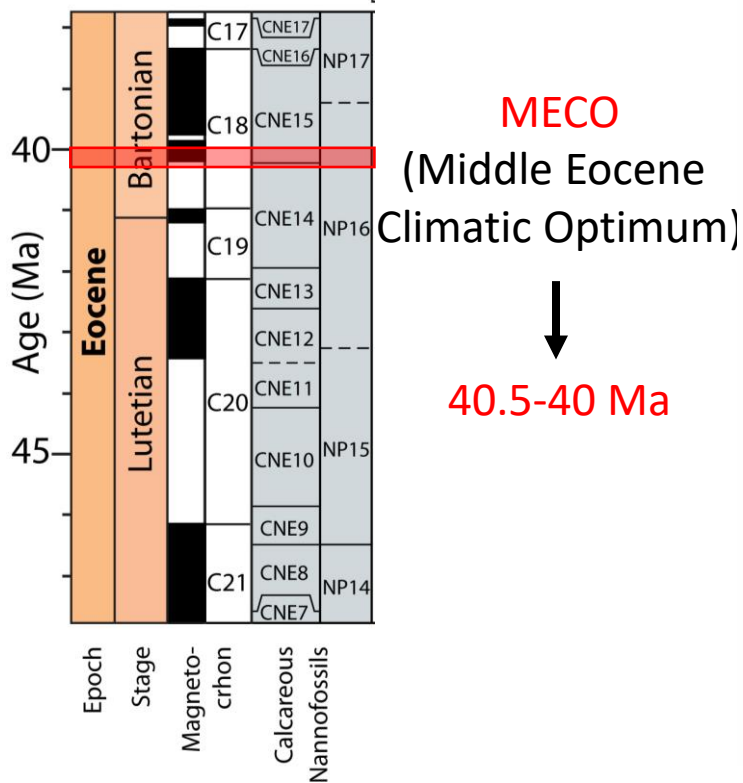
Damien Huyghe, Justine Briaïs, Christine Flehoc, Laurent Emmanuel, Mathieu Daëron, Didier Merle, Olivier Aguerre

Paris Basin during Bartonian

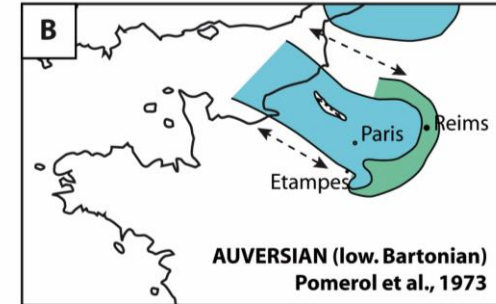
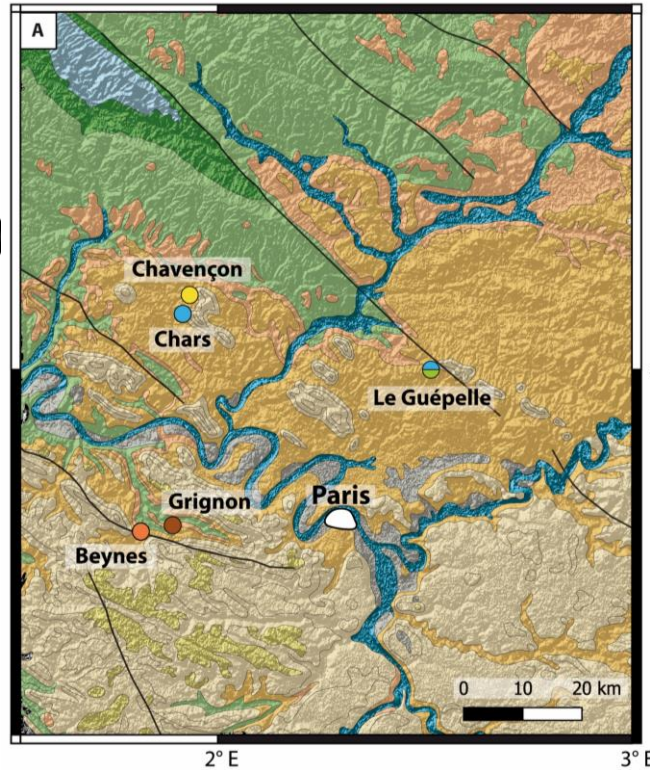
Bartonian

37.71 Ma

41.03 Ma



Paris Basin



Oceanic domain

Shallow marine domain

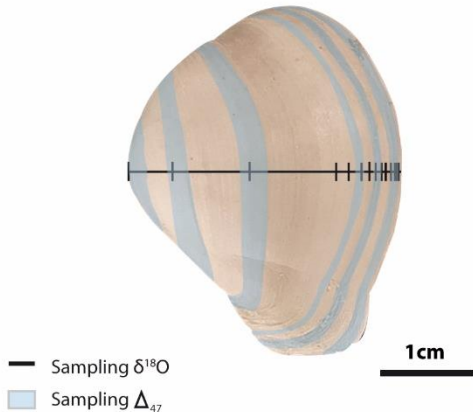
Well documented

Important salinity variations

Sampling and analysis of mollusks shells

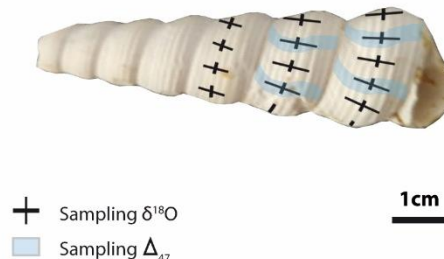
Seasonal reconstruction : **temperature**, **salinity**

Proxies : $\delta^{18}\text{O}$ and Δ_{47}



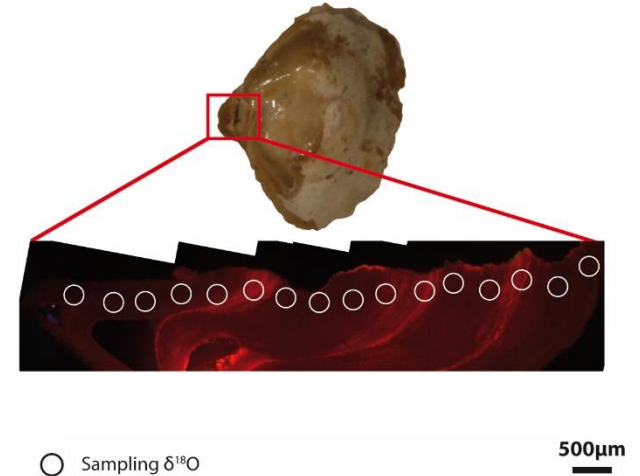
Bicorbula gallica

Le Guépelle
Sables du Guépelle



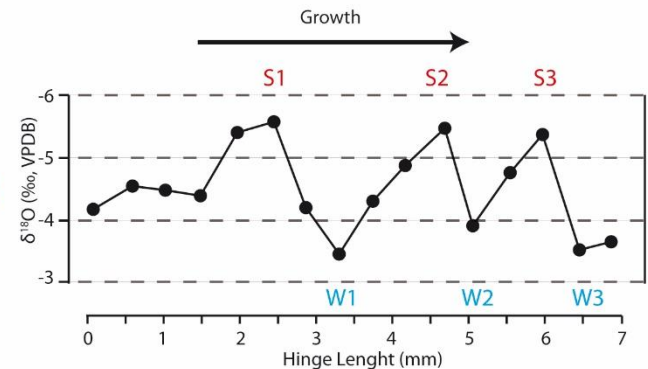
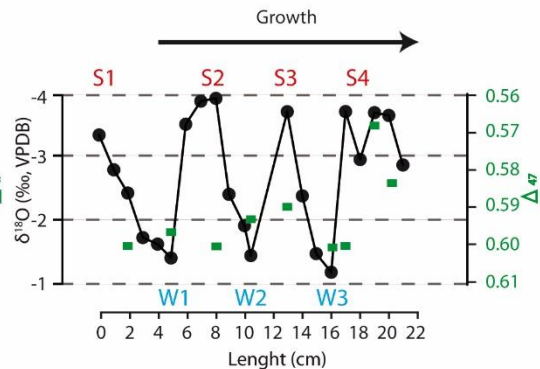
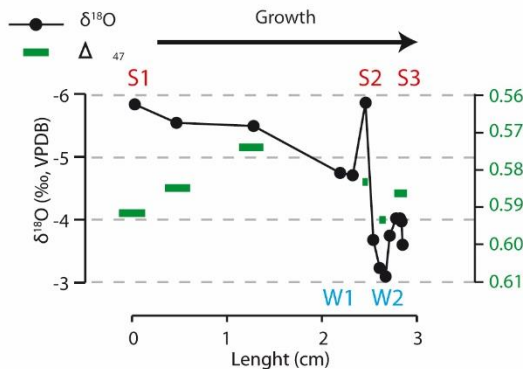
Turritella sulcifera

Chavençon
Horizon de Mt St-Martin



Crassostrea cucullaris

Le Guépelle
Sables de Beauchamp



$\delta^{18}\text{O}$ seasonal variations

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Middle Eocene Climatic Optimum

MECO : Global warming from 40.5 – 40.0 Ma

Mean annual T° | +4 to +6°C oceans
+6 to +10°C littoral Paris Basin

Deep-ocean
temperature (°C)

Paris Basin

littoral seawater temperature (°C)

