Assessing the silicate weathering feedback in the mid-Cretaceous high-CO_2 world

Collaborating Scientists:
S. Voigt, M. Seitz (Goethe Univeristy Frankfurt)
P. Pogge von Strandmann (UCL & Gutenberg Uni Mainz)
PhD-Student (N.N.)

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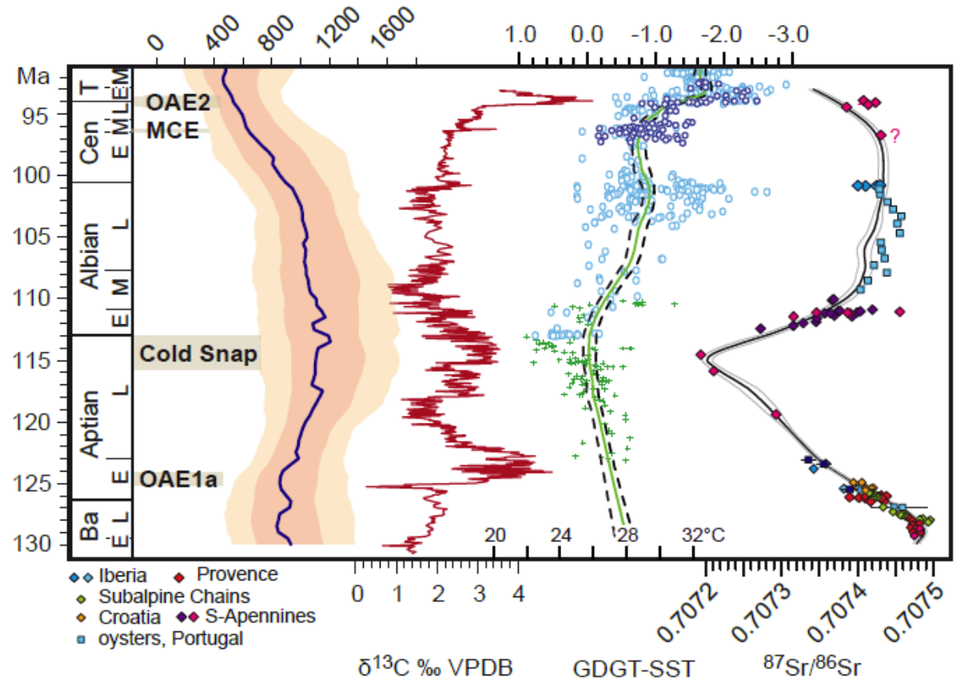
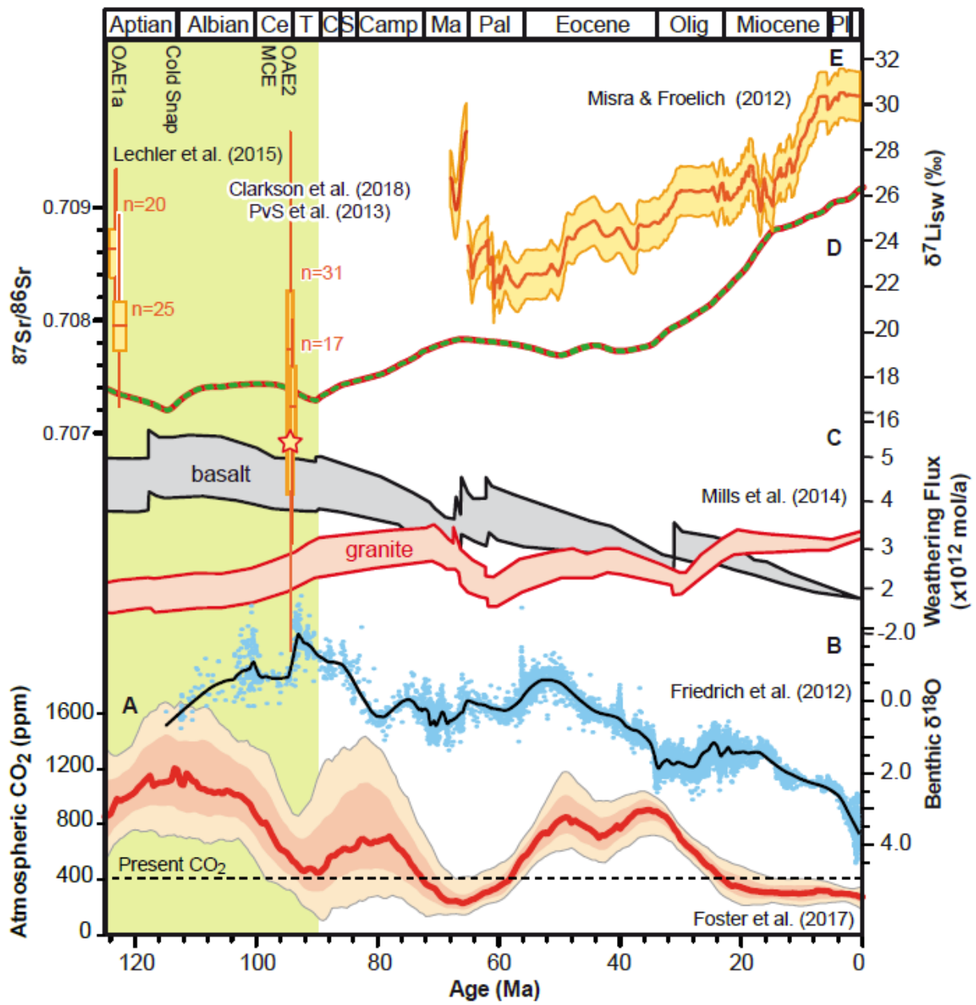
Mid-Cretaceous (130-90 Ma) times witnessed elevated rates of continental rifting and oceanic crust production, resulting in increased atmospheric CO_2 and pronounced greenhouse climate conditions. **Atmospheric CO_2 reduction**, in turn, is achieved either by organic matter burial, by changes in the intensity of silicate weathering or a combination of both. The project aims to generate a new mid-Cretaceous seawater lithium isotope curve to assess the **silicate weathering feedback** by using the archives of marine carbonates and pristine biogenic calcites.
Expected deliveries of the project include:

* Insights into the **mid-Cretaceous long-term δ^7Li variability** relative to OAEs, the seawater strontium isotope record and the amount of basalt weathering
* Information about weathering intensity during climatic cold phases
* Estimates of preservational and taxon-specific vital effects on δ^7Li.





Evolution of atmospheric CO_2 (A) and deep-sea temperature (B) during the last 120 Ma in comparison to modeled relative weathering fluxes of basalt and granite (C), the seawater $^{87/86}Sr$ ratio (D) and the seawater δ^7Li record (E) . The green box marks the target period of this proposal.