



Cenozoic variations in atmospheric CO₂ and ocean carbonate chemistry

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Climate variations of the Cenozoic are often thought to be driven or amplified by changes in greenhouse gas concentrations. Over the last two decades proxies have been developed to estimate past atmospheric CO₂ variations from the sedimentary remains of surface ocean dwellers such as planktic foraminifers and coccolithophores. Continued proxy validation and improved temporal resolution have refined earlier estimates and a clearer picture of the interplay between climate and atmospheric CO₂ is emerging, in particular for the Plio-Pleistocene. Carbonate chemistry estimates from the deep ocean are now also on the rise and allow us to reflect on the interaction between the ocean and atmospheric carbon reservoirs. We will present and compare reconstructions of Cenozoic surface ocean carbonate chemistry from boron isotopes and alkenones from the surface ocean, as well as new deep-sea estimates from boron isotopes in benthic foraminifers.