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Constraining the CO_2 system of the early Cenozoic Greenhouse with boron isotopes

Matthew A. Kaminski (1), James W. B. Rae (1), Philip F. Sexton (2), Eleni Anagnostou (3), Gavin L. Foster (3), Sarah Greene (4), Rosanna Greenop (1), Sandra Kirtland-Turner (5), and Andy Ridgwell (5)

(1) Department of Earth and Environmental Sciences, University of St Andrews, St Andrews KY16 9AL, UK, (2) Department of Environment, Earth and Ecosystems, The Open University, Milton Keynes MK7 6AA, UK, (3) National Oceanography Centre Southampton, University of Southampton, Waterfront Campus, European Way, Southampton, SO14 3ZH, UK, (4) School of Geographical Sciences, University of Bristol, University Road, Bristol BS8 1SS, UK, (5) Department of Earth Sciences, University of California, Riverside, California 92521, USA

The CO_2 dynamics of the early Cenozoic Greenhouse remain poorly understood: estimates of past atmospheric CO_2 concentrations over this time are high but variable, and discussion remains on the driving mechanisms of long term changes in carbon cycling. This climatic state also provides the backdrop for numerous hyperthermal events, including the PETM, which may provide crucial insights to the current carbon cycle perturbation. This research aims to shed light on the state of the ocean carbonate system in the Paleocene and Early Eocene. We present new boron isotope data from benthic foraminifera, which can be used to reconstruct relative changes in ocean pH. These are coupled with modelling experiments performed with cGenie Earth system model runs to give new constraints on the carbon cycle and carbonate system of the early Cenozoic.