Geophysical Research Abstracts
Vol. 17, EGU2015-14518-3, 2015
EGU General Assembly 2015

Stable isotope stratigraphy of the shallow marine early Quaternary of Noordwijk, North Sea Basin.

Lars J. Noorbergen (1,3), Lucas J. Lourens (1), Dirk K. Munsterman (2), and Roel M.C.H. Verreussel (2)

(1) Faculty of Geosciences, Utrecht University, The Netherlands, (3) Faculty of Earth and Life Sciences, Vrije Universiteit Amsterdam, The Netherlands, (2) TNO - Netherlands Organization for Applied Scientific Research, Utrecht, The Netherlands

The North sea area is a classical region of Early Quaternary stratigraphy, comprising many investigations in both the terrestrial and marine realm. Several investigations suggested the imprint of early Quaternary glacial - interglacial cycles in the sedimentary archive. Complementary integration of these studies is however hampered due to scarcity of independent age control. Moreover, a counterintuitive relation between lithology and glacial - interglacial sea level fluctuation is further complicating palaeo-environmental interpretations. In order to tackle above problems an independent high resolution chronology is essential.
Here, a high-resolution benthic stable isotope record is presented of shallow marine sediments from borehole Noordwijk covering the early Quaternary. Based on isotope value and pattern similarities, we calibrate our δ18O record of Noordwijk to the global LR04 reference stack [1]. The resultant high-resolution isotope chronology is providing important insights on regional stratigraphy. The time control is further used for correlating additional on- and offshore North Sea boreholes in order to create a regional interpretation of environmental and sedimentary changes.

[1] Lisiecki, L.E., Raymo, M.E.A., (2005). Pliocene-Pleistocene stack of 57 globally distributed benthic d18O records. Paleoceanography, 20.