



## **Pleistocene PaleoDEMs for GIA modelling and ice age palaeogeography of the North Sea Basin**

Freek Busschers (1) and Kim Cohen (1,2,3)

(1) TNO - Geological Survey of the Netherlands, Utrecht, the Netherlands, (2) Department of Physical Geography, Faculty of Geosciences, Utrecht University, Utrecht, the Netherlands, (3) Deltares, Applied Geology and Geophysics, Utrecht, the Netherlands

An important input for modelling coastline shifting over ice age periods with sea-level fall and rise, is palaeotopography. Palaeotopography, however, is difficult information to acquire and usually sophisticated geophysical glacio-isostatic adjustment (GIA) models are run over just the modern bathymetry. We present a set of palaeoDEMs for the last two glacial Terminations (c. 130 resp. c. 15 ka) for the southern North Sea Basin (onshore and offshore parts; Netherlands, Belgium and British surroundings), including a warping DEM to correct for long-term 'background' subsidence.

The palaeoDEMs are constructed using techniques developed for high resolution geomodelling by TNO Geological Survey of the Netherlands, using borehole data and surface bathymetry/topography grids and scripting that honours lithostratigraphical order. The warping DEMs make use of the thickness mapping at Quaternary and Neogene time scales. Together, these sets can be used to patch the modern bathymetry and ice-thickness DEMs that are currently used in GIA modelling.