

Geomorphological mapping of the Belgian seabed and its submerged landscapes

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Low- and high-resolution Digital Terrain Models (DTMs) are available as interoperable gridded data layers and data products. These bathymetry data, together with increasing availability of various terrain analysis tools, give new impetus to a more uniform geomorphological mapping of the marine realm. To test approaches in sandy shelf areas, a multi-scale analysis was already performed on bathymetric data from the Belgian part of the North Sea using the Benthic Terrain Modeler (BTM) in ArcGIS and other GIS-related raster tools for analysing the topography of the seabed. Geomorphological features present on the Belgian Continental Shelf are sandbanks and crests, valleys and depressions, and sandwave fields. Recently, a derivative of the digital bathymetry model was constructed based on in-depth processing and re-interpretations of sediment cores in conjunction with extensive seismic records, resulting in a depth-converted structure map (DCSM) of the Top-Paleogene surface at high-resolution scale of 1:250 000 (De Clercq et al., 2016). Similar GIS analyses have now been conducted on the appearing submerged landscapes from 120,000 to 100,000 years ago allowing revealing planation surfaces, escarpments, slope breaks, paleo-valleys and -ridges in an automated way. Both resulting geomorphological mapping products contribute to EMODnet-Geology's work packages on geomorphology and submerged landscapes.

De Clercq, M., Chademenos, V., Van Lancker, V., & Missiaen, T. (2016). A high-resolution DEM for the Top-Palaeogene surface of the Belgian Continental Shelf. *Journal of Maps* 12(5), 1047-1054.