



## **The large-scale geological evolution of the North Sea Basin during the Quaternary**

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The infill pattern of the Quaternary sediments of the North Sea Basin has been mapped using a large 2D and 3D seismic data base. The Quaternary North Sea basin is a N-S-trending basin, 100-200 km wide and up to 1000 m deep. The basin begins on land in the Netherlands at 52°N and ends outside western Norway and north of Shetland at c. 62°N. The infill pattern of the basin is outlined and the depositional setting studied based on buried surfaces in 3D seismic cubes. The southern and central basin was filled in by a thick, deltaic sequence deposited from E-SE, whereas the northern basin was infilled by prograding glacial debris flows deposited from the east. On top of the sediments mapped in the northern basin, west of the Norwegian Channel, an upper regional unconformity (URU) is present. This unconformity is defined by a shift from westward (below) to eastward (above) dipping reflectors, recording a major change in sedimentation (before and after the onset of the formation of the Norwegian Channel). The link between the Early Quaternary North Sea Basin and the evolution of the Norwegian Channel is discussed. The age of the URU is variable and uncertain, but the oldest ages may be around 0.8 million years.

The sedimentary sequences have been linked to the seismic stratigraphy on the Dutch shelf which is dated based on palaeo-magnetic and biostratigraphic data (Kuhlmann and Wong, 2008).