



## **Sea level induced landscape development of a barrier island coastline (Amrum/North Sea)**

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The aim of the study is to reconstruct the landscape development in front of the west coast of the North-Frisian Island of Amrum. An integrated approach using ground-penetrating radar (GPR) and sedimentological analyses of shallow sediment cores has been applied. Based on high-resolution geophysical and sedimentological data a sedimentary model was generated that describes the postglacial landscape development in front of the island's west coast.

The main focus lies on the reconstruction of the sedimentary environment as well as of the coastline of the island's west coast before the barrier sandbar of the so-called Kniepsand was connected to the island. Furthermore the process of barrier sandbar attachment to the Pleistocene island core was summarized. The study figured out that the conditions for sedimentation had been quite different in previous times. Before the sandbar was connected to the island, tidal flat deposits had been accumulated in a low energy environment. Tidal flat deposits show a general coarsening upward sequence. With a rising Holocene sea level tidal flat deposits turn into overlying coarser grained beach deposits. Old cliffs formed through several storm surges are also preserved in GPR data and redraw old sea level positions.