

Modeling offshore sandwaves

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ABSTRACT

The offshore seabed shows various types of seabed patterns. This keynote will focus on one of these, being sandwaves. These features have elongated crests, about 500 m apart, and show a wavy pattern perpendicular. The sandwaves have heights up to 25% of the water column, so typically amplitudes of 5-10 meters. Sand waves are abundant: they cover the major part of the southern North Sea. They are also dynamic as the features migrate up to 20m/year. Apart from being scientifically relevant (what forms these features?) they are also practically relevant: when planning pipeline trajectories and offshore windparks and shipping lanes one has to deal with the sandwave dynamics. In this presentation the focus will be on the modeling part of the sand waves. So what mechanism forms them and what approaches are available to describe the generation and evolution of sand waves. Typical approaches are idealized modeling (stability analysis) and modeling using complex models as Delft3D. I will discuss them and show the possibilities and limitations of both. Special attention will be given on the link between sandwaves and biologic activity.

