



Decadal Evolution of Wadden Sea morphology, Germany

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The Wadden Sea features tidal channels and intertidal flats whose evolution is highly driven by hydrodynamic conditions in various time and length scales, from short single storms to long term sea level rise. Meso-scale (multi decadal) evolution of channel shoal systems in the German part of the Wadden Sea is quantified by geoprocessing of time-series of digital elevation models (DEMs). The temporal trend of channel-shoal hypsometries is analysed. Preliminary results for the Outer Weser tidal flats show a clear trend of sediment accretion. In contrast, subtidal areas tend to erode. This pattern is consistent for the whole Outer Weser estuary, which indicates an overall steepening of tidal channels. As the Outer Weser estuary is not necessarily representative for the whole German Bight coast with its diverse geomorphologic settings, the method is applied to the larger German Bight.