



Tidal range evolution at the port of Esbjerg, Denmark station: 129 years of high resolution data.

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Evolution in tidal range has implications for flooding events, erosion and sediment transport. It has been shown (Arns et al., 2015) that changes in tidal range can be significantly different from just the increase in mean sea level. In view of recent work (Du et al., 2017) the problem of how tidal range depends on changes in sea-level is clearly complex and in need of more analyses of observations. Using a unique 129-year long hourly-resolution time-series of sea-level observations in the Wadden Sea at the port of Esbjerg in Denmark, we investigate tidal range evolution through the 20th century. A clear evolution of tidal range is seen and is considered in light of sea-level increase and known changes in bathymetry in the approaches to the port.

We compare our findings to those from other stations along the North Sea coast.