

**Secular trends in tidal parameters along the eastern Channel and southern  
North Sea Basin coastlines**

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**Summary.** The study coastlines are in the eastern Channel, from Le Havre to Dunkerque in France and from Brighton to the Isle of Grain in the Thames Estuary in England. Tide gauge data from 16 long-term data sets around these coastlines have been analysed for extreme return period behaviour of water levels and for secular changes in mean sea levels, High Waters, tidal ranges, peak surges and surge values at High Water. In the tidal and surge behavioural sense, the coastlines are strongly divided into two sub regions, one in the Channel and the other in the southern basin of the North Sea. The study finds that the overall behaviour of tide gauge data around the Eastern Channel coastlines strongly corroborates the results of numerical modelling studies by others, suggesting that, in the face of rising sea levels, the standards of safety provision around the southern North Sea coastline are likely to be at considerably more risk than along the Channel frontages. In particular, around the North Sea part of the frontage, secular trends in High Water levels exceed those due to mean sea level alone and trends in surge values are probably also more severe than their counterparts along the Eastern Channel coasts.