



AMSeL – Mean Sea Level and Tidal Analysis at the German North Sea Coastline

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Changes in the global mean sea level have far-reaching consequences for human beings as well as the natural environment. The specification of a Mean Sea Level (MSL), as an important reference, especially in connection with worldwide climate change, has no tradition in Germany and in many other countries. One problem in this regard is surely the variety of different definitions and therefore different approaches to determine the MSL, which makes the comparison of numerical values more complicated. An additional problem of MSL rise affects the drainage of low-lying inland areas. An accumulation of many tides, whose high water levels do not exceed the design water level, but whose low water levels eliminate the possibility of inland drainage, could be much more dangerous than the occurrence of one extreme storm surge with a short exposure time.

The research project AMSeL (“Analysis of high-resolution tide curves and estimation of the MSL at the German North Sea coastline”), which started in October 2007 at the Research Institute for Water and Environment (fwu) at the University of Siegen, follows these questions by studying changes in the MSL over the last century and by analysing the exposure times and the frequency of extreme tides based on high-resolution tide curves. Altogether, 16 gauges along the German North Sea coastline will be investigated to obtain representative results. The collected and processed data will be published via the North- and Baltic Sea Coast Information System NOKIS to serve as readily available data for further scientific and administrative purposes. Among other things it is intended to compare the results of the MSL computations

with data from the PSMSL (Permanent Service of Mean Sea Level) database.