



## **Nordic Sea Level – Analysis of PSMSL RLR Tide Gauge data**

Per Knudsen and Ole Andersen

DTU Space, National Space Institute, Geodesy, Kgs. Lyngby, Denmark (pk@space.dtu.dk)

Tide gauge data from the Nordic region covering a period of time from 1920 to 2000 are evaluated. 63 stations having RLR data for at least 40 years have been used. Each tide gauge data record was averaged to annual averages after the monthly average seasonal anomalies were removed.

Some stations lack data, especially before around 1950. Hence, to compute representative sea level trends for the 1920-2000 period a procedure for filling in estimated sea level values in the voids, is needed.

To fill in voids in the tide gauge data records a reconstruction method was applied that utilizes EOFs in an iterative manner. Subsequently the trends were computed. The estimated trends range from about -8 mm/year to 2 mm/year reflecting both post-glacial uplift and sea level rise.

An evaluation of the first EOFs show that the first EOF clearly describes the trends in the time series. EOF #2 and #3 describe differences in the inter-annual sea level variability with-in the Baltic Sea and differences between the Baltic and the North Atlantic / Norwegian seas, respectively.