



## **Data recovery and analysis of the historical tide gauge record in Santander (Northern Spain) since 1876**

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Historical sea level observations recorded by three tide gauges in Santander (Northern coast of Spain) have been digitized from archived log-books. The data consist of daily mean and maxima sea levels spanning the period 1876-1928. The three instruments are located in the same harbour, where a modern tide gauge has provided hourly sea level observations since 1943. A set of levelling surveys carried out since 1876 enabled the linking of tide gauge benchmarks, and thus the building of a unique, extended sea level record at this location. Careful analysis shows several periods with datum shifts that should be discarded for the estimation of mean sea level changes (not for the daily maxima though). The comparison with the Brest tide gauge, the longest record in the Bay of Biscay, shows good consistency in terms of linear mean sea level trends.