



Sea-level rise and variability in China

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In this study we analyze the sea-level rise and variability along the Chinese coast using 26 tide gauge records since 1950s. For the period 1993-2016 sea level trends from tide gauges are in good agreement with estimates from satellite altimetry, suggesting sea level trend of 3.29 mm/yr. The main difficulties to estimate sea level rise for the period since 1950 is a lack of information about the vertical land movement at the location of tide gauges. In our study the vertical land movement is estimated from the difference between tide gauge records and satellite altimetry. The results show that for many tide gauge location (mainly cities) there is a large subsidence due to the groundwater extraction. Variability in tide gauge records is mainly due to seasonal cycle, link to ENSO and local changes. For each tide gauge record we estimate sea level budget and identify the main source for sea level rise along the Chinese coast.