



Estimation of sea-level-rise trends in the north Indian Ocean coasts from tide gauge records and satellite altimetry

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Inter-consistency checks among the tide gauge records in the north Indian Ocean was made for records longer than 20 years and it is shown that these records are consistent with each other and can be used for sea-level-rise trend estimates (Unnikrishnan and Shankar, 2007). We estimated the trends in mean-sea-level rise for selected records having a duration of more than 40 years. The average trend for sea-level-rise for the north Indian Ocean coasts is found to be 1.30 mm/year, excluding the region of the delta along the north east coast of India. In this region, for instance at Diamond Harbour (Kolkata), sea-level-rise trends of over 5 mm/year are found, which could be partly associated with the sinking of the delta. The average value of sea-level rise trend for points closest to the tide gauge locations, determined from the global reconstruction estimate of Church et al. (2004), is close to 2 mm/year, excluding the region of Kolkata. Analysis of Topex/POSEIDON altimetric data showed considerable spatial variability in the sea-level rise trends in the north Indian Ocean.