



Long Term Sea Level Change from Satellite Altimetry and Tide Gauges in the Indonesian Region

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The Indonesian region consists of thousand of islands and huge population inhabit low land in coastal areas. Therefore, an understanding of the past and future changes in sea level becomes very important in this region. This research is addressed to investigate the characteristic of sea level rise in the Indonesian region based on satellite altimetry and tide gauges data. To estimate the sea level rise from satellite altimetry data in the interval 1993-2009, we use the along-track data from Envisat, Topex/Poseidon and Jason-1 missions. Both the response and the harmonic analysis methods are applied to calculate the ocean tide improving locally the global tide models, which accuracy is particularly low in the region. By means of the objective analysis technique, gridded sea level anomalies are produced. The sea level change from altimetry is then estimated from both gridded and along-track sea level anomalies and compared to the sea level change at tide gauge stations. In coastal region, we use altimeter data made available within 5-10 km of the coast by dedicated pre-processing.