

Interpreting the Sea Level Variability over Malaysian Seas using Multi-mission Satellite Altimeter

Amalina Izzati Abdul Hamid, Ami Hassan Md Din and Kamaludin Mohd Omar (Malaysia)

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SUMMARY

This is a summary on the paper on interpreting the sea level variability over Malaysian Seas using Multi-mission Satellite Altimeter. As one of the contribution of climate change is sea level rise, it should be our concern since it is proven that global sea levels have been rising through the past century and are expected to rise at an accelerated rate throughout the 21st century. Eventually, sea level rise will endanger many low-lying and unprotected coastal areas on many ways due to this change. This study is proposing a significant effort to interpret the sea level trend and its variability over Malaysian seas; Malacca Straits, South China Sea, Sulu Sea and Celebes Sea. It will present an approach to quantify the sea level trend based on a combination of multi-mission satellite altimeter from year 1993 to 2015 (~ 23 years). There are 8 altimeter missions involved in this study, namely, Topex, Jason-1, Jason-2, ERS-1, ERS-2, ENVISAT, Cryosat-2, and Saral. Multi-mission satellite altimetry data will be derived and processed by using Radar Altimeter Database System (RADS). The daily solutions for sea level anomaly data are then combined for monthly average solutions for sea level quantification and sea level variability study. Afterwards, the time series of the sea level trend is quantified using robust fit regression analysis. The findings clearly show that the absolute sea level trend is rising and varying over the Malaysian seas with the rate of sea level varies and gradually increases from east to west of Malaysia. Highly confident and correlation level of the 23-year measurement data with an astonishing root mean square difference permits the absolute sea level trend of the Malaysian seas has raised at the significant acceleration of 4.22 ± 0.12 mm yr⁻¹ and rise about 0.05m since year 1993 to 2015. As a conclusion, the information on sea level change and variability in this region are expected to be valuable for a wide variety of climate applications, coastal mitigation and to study environmental issues such as global warming in Malaysia.

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