

Radar-derived Fresh water flux and its possible impact to the oceanic stratification observed during the Years of the Maritime Continent (YMC)

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To investigate the air-land-sea interaction in the Maritime Continent (the world's largest archipelago bridging tropical Indian Ocean and tropical western Pacific), a series of the field campaign

“YMC-Sumatra” was conducted as part of the project “Years of the Maritime Continent (YMC)”. In “YMC-Sumatra 2017”, we deploy the research vessel “Mirai” at one station near the west coast of Sumatra Island to obtain time series.

The continuous dataset from C-band polarimetric radar is converted to the rainrate (i.e. fresh water flux) by utilizing the data from disdrometers and raingauges. The estimated fresh water flux is compared to the oceanic near-surface stratifications measured by the unmanned surface vehicle “wave glider”. The observed salinity at 0.2m and 6m depths differ under a precipitating event with weak wind (< 5 m/s). The event was followed by the strong wind (>10 m/s) precipitation. After the event, low salinity layer was captured down to 30~40 m depth for more than half days.

Keywords: fresh water flux, oceanic near-surface stratification, YMC (Years of the Maritime Continent)