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# Overview of the Pre-YMC2015 campaign over the southwestern coastal land and adjacent sea of Sumatera Island, Indonesia

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An international research project named Years of the Maritime Continent (YMC) is planned during 2017-2019 to expedite the progress of improving understanding and prediction of local multi-scale variability of the Maritime Continent (MC) weather-climate system and its global impact through observations and modeling exercises.

We carried out a campaign observation over the southwestern coastal land and adjacent sea of Sumatera Island, Indonesia, during November-December 2015 as a pilot study of the YMC to examine land-ocean coupling processes in mechanisms of coastal heavy rain band (CHeR) along Sumatera Island and further potential scientific themes in the coming YMC. We deployed two land observation sites at Bengkulu city (3.86S, 102.34E) in the southwestern coast of Sumatera Island with various kinds of instruments including an X-band dual polarimetric (DP) radar and a C-band Doppler radar, and the R/V Mirai approximately 50 km southwest (4.07S, 101.90E ) of the land stations with a C-band DP radar. We made 3 hourly soundings at Bengkulu and the R/V Mirai during 09 November - 25 December (47 days) and 24 November - 17 December (24 days), respectively. In addition, 18 videosondes observations, which could identify precipitation particles by an onboard camera in and out of rainclouds, were performed under heavy rainfall condition to examine cloud microphysical processes as well as simultaneous RHI observations with the Mirai DP radar.

Whereas rainfall amount during the period was less than that of climatological view due to the Godzilla El-Nino event in this rainy season, we found concrete diurnal variation with thunderstorms in the evening along the foothills of coastal land and widely spread stratiform precipitation mainly over the adjacent sea due to the passage of Madden-Julian Oscillation (MJO) convection with strong westerly wind in the lower troposphere during the former and latter halves of the campaign period, respectively. Diurnally developed thunderstorms and their lifecycles which formed CHeR were examined based on simultaneous sounding and DP radar observations both on and off the Sumatera Island as well as their interaction with the ocean mixing layer over the coastal water. In addition, logistical difficulties we encountered to carry out in situ observations over the Indonesian water and land are briefly introduced for discussing an observational strategy of the coming YMC campaign in 2017-2019.