

## A role of eastward-propagating intraseasonal oscillation in controlling coastal upwelling southwest of Sumatra

\*Takanori Horii<sup>1</sup>, Iwao Ueki<sup>1</sup>

1. Global Ocean Observation Research Center, Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

Coastal upwelling along the southwestern coast of Sumatra and Java is closely associated with El Niño/Southern Oscillation and occurrence of the Indian Ocean Dipole (IOD). In this study, we used a combination of observational data and satellite-based datasets, and investigated the role of eastward-propagating atmospheric intraseasonal oscillation (MJO/ISO) in controlling the coastal upwelling system. Intraseasonal coastal upwelling events frequently occurs in June-September, in response to anomalous southeasterly alongshore winds, with weak (strong) amplitude along the coast of Sumatra (Java). Observational data reveal that due to salinity stratification and thick barrier layer southwest of Sumatra, subsurface cold-water upwelling signal tends not to reach to mixed layer. We also found that the coastal upwelling signal tends to be suppressed by eastward-propagated downwelling Kelvin waves which was driven by anomalous equatorial westerly winds 15-30 days ago. Implications of these observational results for understanding the IOD will be discussed.

Keywords: Coastal upwelling, Sumatra and Java, Eastern Indian Ocean, Atmospheric intraseasonal oscillation