

Indonesian Throughflow Pathway Observed during MR15 – 05 Cruise and Baruna Jaya 2015 Cruise in the Southern Jawa – Bali Waters

○Fadli Syamsudin (BPPT), Harun I. Akbar (BPPT), Katsuro Katsumata (JAMSTEC), Akihiko Murata (JAMSTEC), and Gentio Harsono (Indonesian Navy)

Japan Agency for Marine-Earth Science and Technology (JAMSTEC) and Agency for the Assessment and Application of Technology (BPPT), Indonesia have conducted hydrographic CTD measurement across near the coast to the southern off central Jawa water during MR15-05 cruise from 23 December 2015 to 11 January 2016 using R/V *Mirai* (see Katsumata's poster for the cruise track). This crossed transect could trace the Indonesian throughflow (ITF) pathways outflowing from Lombok and Ombai straits, and Timor passage. In addition to understanding concise ITF pathway in the study area, we also used *Baruna Jaya* BPPT cruise during 23 September – 18 October 2015 at the same Northwest monsoon with *Mirai* cruise (see fig 1 and 2 for the vertical profile of temperature along transect the southern coast of Jawa and a crossed transect of salinity, respectively). The study areas are rich with physical forcings from high to low frequencies from eastward costally south Jawa current and Indian ocean Kelvin along the southern coast of Jawa-Bali water and westward ITF (Syamsudin and Kaneko, 2013) and mesoscale generating eddies together with wetward upwelling Rossby wave propagation in the offshore region of 12 – 16°S (Masumoto and Meyers, 1998). The existence of south equatorial current flows entering the region also make the study area not an easy target to study due to interactions among the current and wave systems in the region. We are interested to study how the ITF pathway could be identified and traced well and explore a potential influence of this ITF to the generation of mesoscale eddies around coast of southern east Jawa – Bali waters. The westward ITF current is distinguishable with no vertical shear or homogeneous profiles and could be traced its characteristics by T-S diagram. Further analysis, we will use recent development of sea surface temperature (SST) image from very high temporal resolution of *Himawari* satellite with hourly bases data to reveal how the ITF pathway indicated by relatively warm surface SST interact with other current systems to generate mesoscale eddies. Further study needs also to address how the ITF current structure vary with spatial and temporal changes due to ocean climate variability.

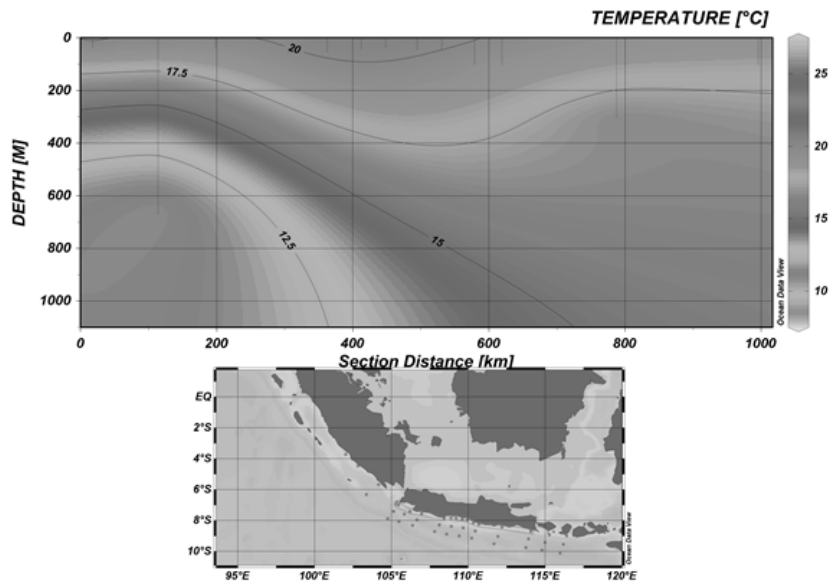


Fig.1 Vertical profile of temperature taken from Baruna Jaya BPPT Cruise during 23 September – 18 October 2015 along transect in the southern coast of Jawa – Bali waters

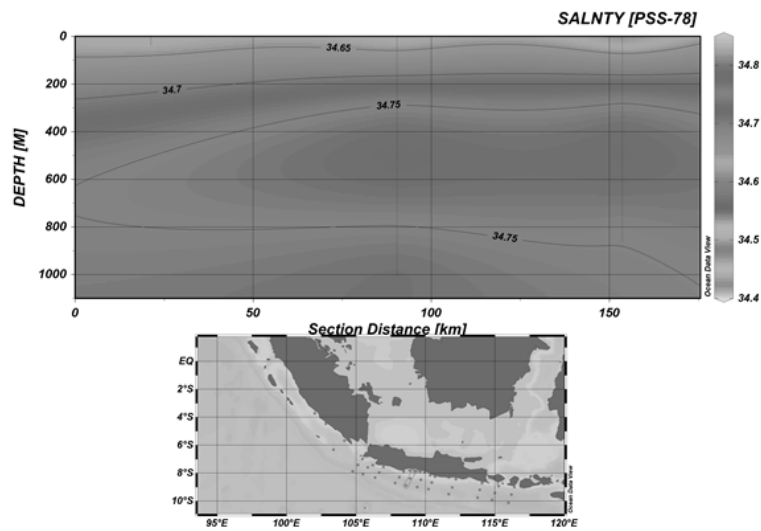


Fig. 2 Vertical profile of salinity taken from Baruna Jaya BPPT Cruise during 23 September – 18 October 2015 a crossed transect in the southern coast of Jawa – Bali waters