Intraseasonal baroclinic waves in the Indonesian Throughflow Passages

Kandaga Pujiana¹, Arnold L. Gordon¹, Janet Sprintall², and Bo Qiu³

¹Lamont-Doherty Earth Observatory of Columbia University ²Scripps Institution of Oceanography ³University of Hawaii

The intraseasonal variability [ISV], 20-90 days, is a robust feature observed in the Indonesian Throughflow [ITF] passages. Through the analysis of mooring data in Makassar Strait [ITF inflow passage] and Lombok Strait [ITF outflow passage], we will demonstrate that the planetary and boundary waves originating in the Western Pacific Ocean and the Indian Ocean contribute significantly as the main perturbations for the ISV recorded at both straits. The remote forcings transmit their energy into the ITF passages in a baroclinic waveform that expresses unique features such as upward-downward energy propagation, vertical mode modification due to wave-bottom topography interaction, and ENSO-IOD modulated responses.