

EGU2020-19083

<https://doi.org/10.5194/egusphere-egu2020-19083>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



Internal wave energetics modulated by Indonesian Throughflow at Lombok Strait

Zhenhua Xu

Institute of Oceanology, Chinese Academy of Sciences, China (xuzhenhua@qdio.ac.cn)

The interaction between the energetic internal waves in the Indonesian Seas and the Indonesian Throughflow (ITF) is not well known. Here we conduct a series of high-resolution numerical simulations surrounding the Lombok Strait, Indonesia, which is an important exit channel for the ITF, to explore the influences of the ITF on the spatiotemporal variations of M2 internal tides and associated internal solitary waves from the Strait. The ITF enhances the north-south asymmetry of internal tide propagation from the Lombok Strait, thus resulting in the spatial variability of northward and southward internal solitary waves. Interannual variability of internal tide generation and dissipation are due to ITF and air-sea freshwaterflux induced stratification variations associated with El Niño-Southern Oscillation. The local dissipation efficiency q exhibits substantial seasonal and interannual variations, which may provide effective feedback to the climate processes in the low-latitude equatorial oceans.

How to cite: Xu, Z.: Internal wave energetics modulated by Indonesian Throughflow at Lombok Strait, EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020-19083, <https://doi.org/10.5194/egusphere-egu2020-19083>, 2020