

Dissolved organic carbon in the Indonesian Throughflow

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Dissolved organic carbon (DOC) is considered to be an important reservoir of reduced carbon in the ocean. In this study, we aimed to gain insights into the amount of DOC transported via the Indonesian throughflow from the Pacific to the Indian Ocean. To this end, we measure DOC concentrations for the seawater samples obtained in a revisit cruise along World Ocean Circulation Experiment-Hydrographic Programme (WHP) line I10 between Indonesia and Australia, from December 2015 to January 2016. The repeatability of DOC is $\sim 1.0 \mu\text{mol kg}^{-1}$. Along the I10 line, DOC concentrations range from $\sim 38 \mu\text{mol kg}^{-1}$ in the deep waters to $\sim 80 \mu\text{mol kg}^{-1}$ in the shallow waters. The Indonesian Throughflow Waters are observed as the fresh surface and intermediate waters. In the intermediate waters, DOC concentrations are slightly higher compared to those in the other intermediate waters. The net transport along the line into the Indian Ocean is estimated to be $\sim 9\text{-}\sim 18 \text{ Sv}$, using several estimates of geostrophic velocity. In the presentation, we will discuss the transport of DOC from the Pacific to the Indian Ocean.

Keywords: Dissolved Organic Carbon, Indian Ocean, Indonesian Throughflow