ABSTRAK

Pantai Selatan Jawa merupakan wilayah yang menjadi lintasan arus antara Benua Asia – Benua Australia dan Samudera Pasifik - Samudera Hindia. Arus tersebut mempengaruhi sistem perairan Selatan Jawa, diantaranya yaitu Arus Pantai Jawa, Arus lintas Indonesia, dan Arus Bawah Ekuator. Tujuan penelitian ini untuk mengetahui kecepatan dan arah arus bawah, serta variasi musiman yang berada di perairan Pantai Selatan Jawa selama tahun 1993 – 2018. Metode penelitian ini adalah metode observasi, yaitu pengolahan data dari *CMEMS.* Data *CMEMS* yang telah terunduh, diplot sesuai lokasi penelitian, lalu diolah dan divisualisasikan menjadi arus zonal dan meridional. Data arus zonal dan meridional dianalisis menggunakan *wavelet* yang bertujuan untuk melihat variabilitas arus. Hasil penelitian ini menggambarkan kondisi kecepatan dan arah arus bawah yaitu ± 0.001 – ± 0.37 m/s dengan orientasi timur - barat sebagai dampak topografi Pulau Jawa. Variasi musiman yang ditemukan melalui analisis *Continuous Wavelet Transform* di perairan Pantai Selatan Jawa adalah periode intra musiman, musiman, tahunan dan antar tahunan. Pada perairan ini variabilitas arus bawah dominan dalam periode intra musiman dengan rentang waktu 64 hari.

Kata Kunci: *variabilitas, Continuous Wavelet Transform, Arus Bawah Pantai Selatan Jawa, CMEMS.*

ABSTRACT

The South Coast of Java is an area that becomes the trajectory of currents between the Asian Continent – the Australian Continent and the Pacific Ocean – Indian Ocean. These currents affect the southern Java water system, including the Java Coastal Current, the Indonesian Throughflow, and Equatorial Undercurrent. The purpose of this study was to determined the speed and direction of the undercurrent, as well as seasonal variations in the waters of the South Coast of Java during 1993 – 2018. This research was used observation method, namely data processing from CMEMS. The CMEMS data that has been downloaded is plotted according to the research location, then processed and visualized into zonal and meridional flows. The zonal and meridional current data were analyzed using a wavelet which aimed to see the variability of the current. The results of this study described the speed and direction of the undercurrent, namely ± 0.001 – ± 0.37 m/s with an east-west orientation as a result of the topography of Java Island. Seasonal variations found through Continuous Wavelet Transform analysis in the waters of the South Coast of Java were intra-seasonal, seasonal, annual, and inter-annual periods. In these waters, the variability of the undercurrent is dominated by the intra-seasonal period with a span of 64 days.

Keywords: *variability, Continuous Wavelet Transform, South Java Coastal Undercurrent, CMEMS.*