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Retrieval of Sea Surface Current using Himawari-8 SST Data and Particle Image Velocimetry Method in the Flores Sea

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Surface ocean currents are important maritime weather parameters because they influence both human activity and the global climate. In Indonesia, real time observations of surface ocean currents are currently made using HF-Radar installed in two locations, one of which is the Flores Sea. Because observational data is still scarce, efforts to provide surface ocean current data are required. One of the techniques used is the use of Himawari-8 geostationary satellite data on Sea Surface Temperature (SST). Particle Image Velocimetry (PIV), which is based on the cross-correlation technique, was used to calculate surface ocean currents from Himawari-8 SST data. The short term analysis of Himawari-8 SST in the Flores Sea during the northern summer shows
a high SST with values reaching 31˚C, especially around the north coast of Flores Island. Meanwhile, the south coast of Flores Island shows a low SST with a value of less than 26˚C. The direction of movement of surface ocean currents in the Flores Sea varies with the dominant direction towards the West according to the synoptic wind direction where the Australian monsoon occurs. Validation with HF radar data shows a similar pattern of ocean currents with a correlation value of up to 0.6.

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Promotional text

The method of estimating surface ocean currents which is rarely applied in Indonesia.

Oral preference format

in-person

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