
Effects of eddy frontal processes on surface wave propagation

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Résumé

Using the sea surface wind, wave heights and directions simultaneously observed by the CFOSAT, this study analyzes the effects of the mesoscale eddies on the surface wave characteristics. The statistical results show that the significant wave heights (SWH) inside the eddy are generally higher than that outside the eddy. The rms of the SWH variation is around 6%. The wave propagation directions change significantly at the eddy edge where submesoscale frontal processes occur. The rms of direction variation reaches 17%. It seems that the surface waves have refraction at the edge of the eddy. Spectrum analysis indicate that the background current affects the energy level of surface waves.

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