



Remote Sensing of Winds and Windstress for Ocean State Forecasting and Modelling

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Message from the Guest Editors

The two main sources of ocean energy are the incoming solar radiation and the winds. Wind stress, driving the ocean currents, is the most important force, particularly in the tropical and subtropical oceans. The availability of stress helps to improve the estimates of surface scalar fluxes (for example, sensible and latent heats, evaporation, and gas fluxes). Using stress directly avoids the uncertainty of how the sea state modifies stress determined from winds. Stress is also required in estimating the white cap fraction that affects the remote sensing of the ocean through an ocean color monitor. Furthermore, it also helps in evaluating the magnitude of wind-forced currents, upper ocean transport, and the wind roughness contribution to the surface signal for remotely sensed surface salinity. Stress can be described in terms of surface roughness relating to either scatterometer or altimeter observations, or in conventional monitoring, where it can be described in terms of near surface vertical wind shear modified by atmospheric stability.





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