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Wind Stress and Heat Flux over the Ocean in Gale Force Winds

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ABSTRACT

An offshore stable platform has been instrumented with wind turbulence, temperature and wave height sensors. Data from this platform have been analyzed by the eddy correlation method to obtain wind stress and heat flux at wind speeds from 6 to 22 m s⁻¹ in a deep-water wave regime, significantly extending the range of available measurements. The sea surface drag coefficient increases gradually with increasing wind speed.

Sensible heat fluxes have been observed over a much wider range than previously available. Heat flux coefficients are higher in unstable than stable conditions, but are not seen to increase with increasing wind speed.

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