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Observation of the Structure on Moving Gust Patterns Over a Water Surface ("Cat's Paws")

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ABSTRACT

We report on observations of near-surface Velocity, temperature, stress, buoyancy, and surface wave fluctuations, including successive short-time averages of coherences, phases, autospectra, and probability densities of the variables. There appear to be short-duration events where the momentum exchange exceeds the average by 10^2 . These events are characterized by the high energy content in capillary waves, and velocity and temperature fluctuations; they are separated by relatively quiescent periods. Energy transfer between components is discernible as is a tendency to logarithmico-normal distribution in the occurrence of measures of fluctuations.

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