

**VOCALS/Southeast Pacific science: Evaluation of WRF-LES with ship borne data during VOCALS-REx**

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The Weather Research and Forecasting (WRF) model in large-eddy simulation mode is evaluated extensively with measurements from the R. H. Brown research vessel during the VOCALS campaign. A few nocturnal stratocumulus cases including a classical mixed layer and a strongly precipitating closed cellular cloud deck are simulated based on soundings and surface measurements from the ship. Simulations are performed for a variety of grid spacings for domains O(5-50 km). The turbulence structure of the stratocumulus-capped boundary layer is evaluated against that derived from high resolution doppler lidar measurements. The observed closed cellular state with high precipitation is explored to pin down the processes that inhibit the transition to an open cell state.