

VOCALS/Southeast Pacific science: Overview of results from the VOCALS Regional Experiment

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The VAMOS Ocean-Cloud-Atmosphere-Land Study Regional Experiment (VOCALS-REx) is an international field program designed to make observations of poorly understood but critical components of the coupled climate system of the southeast Pacific (SEP), a region dominated by strong coastal upwelling, extensive cold SSTs, and home to the largest subtropical stratocumulus deck on Earth. VOCALS-REx took place during October and November 2008 and involved five research aircraft, two ships and two surface sites in northern Chile. A central theme of VOCALS-REx is the improved understanding of links between aerosols, clouds and precipitation and their impacts on marine stratocumulus radiative properties. In this presentation, we will present some of the key findings from VOCALS-REx focusing on the following questions: (a) how are aerosols, clouds and precipitation inter-related in the SEP region? (b) what microphysical-macrophysical interactions are necessary for the formation and maintenance of open cells? (c) how do cloud and MBL properties change across the strong microphysical gradients from the South American coast to the remote ocean?