

# Aerosols, atmospheric rivers, and California reservoirs

January 19 2015, by Mary Beckman

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The Ron Brown set sail from a Hawaiian harbor. Loaded with data-gathering instruments, it will take measurements below atmospheric rivers while aircraft fly above them.

In the midst of the California rainy season, scientists are embarking on a field campaign designed to improve the understanding of the natural and human-caused phenomena that determine when and how the state gets its

precipitation. They will do so by studying atmospheric rivers, meteorological events that include the famous rainmaker known as the Pineapple Express.

CalWater 2015 is an interagency, interdisciplinary field campaign starting January 14, 2015. CalWater 2015 will entail four research aircraft flying through major storms while a ship outfitted with additional instruments cruises below. The research team includes scientists from Scripps Institution of Oceanography at UC San Diego, the Department of Energy's Pacific Northwest National Laboratory, NOAA, and NASA and uses resources from the DOE's Atmospheric Radiation Measurement (ARM) Climate Research Facility, a national scientific user facility.

The two-month-long study will help provide a better understanding of how California gets its rain and snow, how human activities are influencing [precipitation](#), and how the new science provides potential to inform water management decisions relating to drought and flood.

"We are collecting this data to improve computer models of rain that represent many complex processes and their interactions with the environment," said PNNL's Ruby Leung, who leads the DOE-funded portion. "Atmospheric rivers contribute most of the heavy rains along the coast and mountains in the West. We want to capture those events better in our climate models used to project changes in extreme events in the future."

Provided by Pacific Northwest National Laboratory

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