

ATS/CIRA Colloquium

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Visiting ATS from NOAA

**Dust and Biological Aerosols from the Sahara and Asia
Influence Precipitation in the Western U.S.**

Hosted by Paul DeMott

Friday, January 31, 2014

**ATS room 101; Discussion will begin at 11:15am
Refreshments will be served at 10:45am in the weather lab**

Abstract: Winter storms in California's Sierra Nevada increase seasonal snowpack and provide critical water resources and hydropower for the state. Thus, the mechanisms influencing precipitation in this region have been the subject of research for decades. Previous studies suggest Asian dust enhances cloud ice and precipitation, whereas few studies consider biological aerosols as an important global source of ice nuclei (IN). Here, we show that dust and biological aerosols transported from as far as the Sahara were present in glaciated high-altitude clouds coincident with elevated IN concentrations and ice-induced precipitation. This study presents the first direct cloud and precipitation measurements showing that Saharan and Asian dust and biological aerosols probably serve as IN and play an important role in orographic precipitation processes over the western United States.

Link to colloquium videos and announcement page: <http://www.atmos.colostate.edu/dept/colloquia.php>