

Abstract Submitted  
for the FWS14 Meeting of  
The American Physical Society

**Assessment of Wildfire Smoke Plume Impacts in Reno, NV During the 2013 California Fires** SANDRA LORIA-SALAZAR, HEATHER HOLMES, PATRICK ARNOTT, UNR, ATMOSPHERIC SCIENCE TEAM — The study of aerosol pollution transport and optical properties in the western U.S. is a challenge due to the complex terrain, bright surfaces, presence of anthropogenic and biogenic emissions, secondary organic aerosol formation, and smoke from wild fires. Here, we analyze data from August 2013 as a case study for wildfire smoke plumes in California and Nevada. During this time period, northern California was impacted by large wild fires known as the American and Yosemite Rim fires. The aim of the present work is to investigate the fire plume behavior and transport phenomena using ground level  $PM_{2.5}$  concentrations from routine monitoring networks and aerosol optical properties from AERONET located in Reno Nevada. The multispectral photoacoustic instruments and reciprocal nephelometers located in Reno support the estimation of Approximated Aerosol Height (AOH). Preliminary results show that surface and columnar measurements agreed when the fire signal was high and the smoke plume stayed at low levels. However, there is significant aerosol pollution aloft due to increased mixing in the atmosphere from complex terrain and fire plume dynamics complicating the ability of remotely-sensed near-surface aerosol pollution from satellites.

Sandra Loria-Salazar  
UNR

Date submitted: 14 Oct 2014

Electronic form version 1.4