

Date: THURSDAY, May 19

Time: 3:30-4:45 PM

Place: Buchanan 1930

Speaker: Craig Clements; Associate Professor of Meteorology and Director of the Fire Weather Research Laboratory, Department of Meteorology and Climate Science, San Jose State University

Title: "Mobile Doppler Lidar Observations of Plume Dynamics from Large Wildfires"

Abstract:

Wildland fires impact the atmospheric environment by releasing sensible and latent heat fluxes that modify the flow near the fire front. In addition, the injection of smoke aerosols into the boundary layer and mid troposphere shades the earth's surface inducing circulations that can flow opposite to the ambient wind. These processes can affect fire behavior at a range of scales and therefore, a better understanding of fire-atmosphere interactions will improve fire behavior modeling and eventually lead to increased firefighter and community safety. At the larger scale, plume observations from active wildfires in California were made during the 2014-2015 Rapid Deployments to Wildfires (RaDFire) field campaign using a truck mounted Doppler lidar profiling system. Observations from 8 major wildfires highlight poorly understood aspects of pyro-convection including (1) rotating updrafts, (2) penetrative convection, (3) turbulent entrainment, and (4) smoke-induced density currents. This presentation will discuss new observations of wildfire micrometeorology made during both planned, small-scale field experiments and opportunistic wildfire observational campaigns.