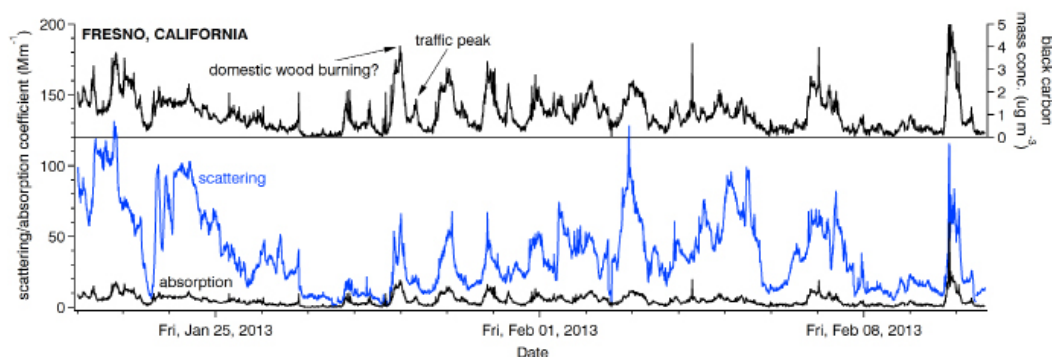




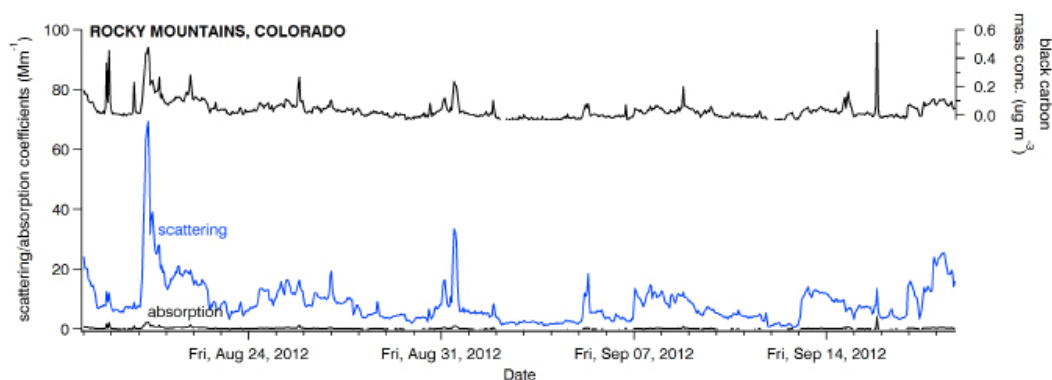
PAX Applications: Black Carbon and Aerosol Optical Property Measurements

Black carbon monitoring - urban site



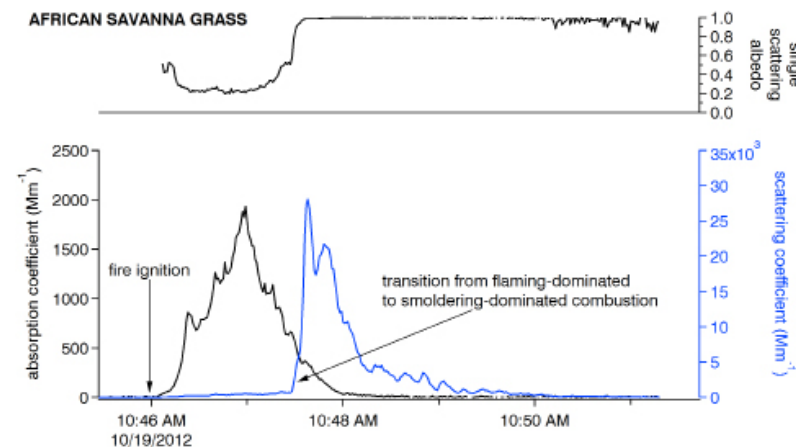
Light scattering and absorption coefficients and black carbon mass concentrations measured at the urban Fresno-Garland ground-site in California's San Joaquin Valley, January/February 2013. This data was collected with a 870 nm PAX as part of the DISCOVER-AQ project. Data are averaged to 5-minute intervals. Preliminary data suggest periods of the campaign had a large, typically nighttime biomass burning influence from domestic wood burning, with other periods having either local traffic or regional influences. The instrument was installed and operated by C. Cappa, X. Zhang and colleagues at the University of California, Davis.

Black carbon and visibility monitoring - remote site



Light scattering and absorption coefficients and black carbon mass concentrations measured at 870 nm by a PAX operating at a remote site in the Colorado Rocky Mountains during the summer of 2012. Data are averaged to 1-hour intervals. Black carbon mass concentrations were 10 to 20 times lower compared to those observed in Fresno, California (above). Scattering coefficients were approximately 10 times lower. The instrument was installed and operated in collaboration with Air Resource Specialists (Fort Collins, Colorado), Colorado State University, and the National Park Service.

Source measurements - biomass burning



Light scattering and absorption coefficients measured at 870 nm by a PAX sampling emissions from a small-scale biomass fire in a laboratory. The single scattering albedo, defined as the ratio of light scattering to light extinction, is also shown. Aerosol particles emitted during the initial, flaming-dominated period of the burn were strongly light absorbing, while those emitted during the smoldering-dominated period that followed were strongly light scattering. Data are shown at 1-second time resolution. Note scattering and absorption coefficients are shown on different scales.

For more information about the PAX email:
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visit the web:
www.dropletmeasurement.com/products/ground-based/pax.html

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