

“Physical and Spectroscopic Properties of Atmospheric Biomass Burning Particles”

by

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Abstract

Biomass burning consumes approximately 8700 Tg of dry plant material per year globally, releasing approximately 1 Tg of smoke particles into the atmosphere per year. Biomass burning particles suspended in the atmosphere can greatly impact the radiative balance and climate of the Earth. However, the radiative properties of biomass burning aerosol particles are poorly understood. Indeed, it is not clear whether smoke particles have a net warming or net cooling effect on Earth's climate.

Laboratory and ambient measurements of the physical and spectroscopic properties of biomass burning particles may greatly improve our understanding of their role in global climate. Size and mass data from ambient measurements of smoke particles from recent Southern California wildfires will be presented. In addition, spectroscopic measurements of the optical properties of biomass burning particles have been performed in the UV/Vis region of the spectrum and preliminary results from those studies will be presented.