

ATS/CIRA Colloquium

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Uncontrolled combustion of shredded tires in a landfill



Hosted by Jeff Pierce

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

In summer 2012, a landfill liner comprising an estimated 1.3 million shredded tires burned in Iowa City, Iowa. During the fire, continuous monitoring and laboratory measurements were used to characterize the gaseous and particulate emissions. In the tire fire plume, we observed significant enrichments in ambient concentrations of CO, CO₂, SO₂, particle number (PN), fine particulate (PM_{2.5}) mass, elemental carbon (EC), polycyclic aromatic hydrocarbons (PAH), azaarenes (PAH with nitrogen heteroatoms) and aromatic volatile organic compounds (VOC). Ambient measurements were used to derive the first *in situ* fuel-based emission factors (EF) for the uncontrolled open burning of tires. Field results are compared to controlled laboratory experiments to examine the variability in tire burning under different conditions. From these results, we gain insights to the nature of tire fire emissions, quantity of pollutants emitted, its health hazards.

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