



Measurements of Organic and Inorganic Compounds during 2008 Summer Olympic Games in Megacity Beijing

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Because of rapid economic development and urbanization, Beijing has become one of the most populated cities in China. Increasing demand for energy in both industrial and domestic sectors leads to large fossil fuel consumption. Consequently, Beijing is frequently experiencing severe air pollution events, which are characterized by high concentrations of ozone (O₃) and particulate matter (PM) and severe deterioration in visibility. Because of concerns on air quality during the 2008 Olympic Games period, the Beijing Municipal Environmental Protection Bureau adopted a series of air quality control measures. The Campaign of Air Quality Research in Beijing and Surrounding Regions (CAREBeijing 2008) was one of a series of comprehensive field studies (e.g., CAREBeijing 2006 and 2007) targeting at understanding of the chemical and physical processes responsible for air pollution episodes. During the CAREBeijing 2008 campaign, a suite of state-of-the-art instruments were deployed to measure trace gases, meteorological parameters, and aerosol size number distribution and chemical compositions. Our team at the Texas A&M participated in the 2008 CAREBEIJING campaign, with the objectives of studying the complex chemistry of the air in Beijing, looking at emission controls and their effectiveness, studying the surrounding air from other regions and how it can affect Beijing's air, and comparing all of our findings with air quality in other cities we have examined, such as Mexico City and Houston. In this talk, results of measurements of volatile organic compounds (VOCs) and gaseous sulfuric acid will be presented to discuss the trends of VOCs and new particle formation associated with the traffic control.