Geophysical Research Abstracts,
Vol. 11, EGU2009-9083, 2009
EGU General Assembly 2009

The Beijing Olympics as a Field Experiment - The Aerosol Footprint of a Megacity

J. Cermak and R. Knutti

ETH Zurich, Institute for Atmospheric and Climate Science, Zurich, Switzerland (jan.cermak@env.ethz.ch)

During the 2008 Olympic Summer Games, emission reductions were enforced in and around Beijing to improve the notoriously poor air quality in the city. In this presentation we explore the effect of these measures on the regional aerosol load. To this end, we compare satellite-retrieved aerosol optical thickness of that period with previous years. In addition to absolute changes we explore the 2008 situation in its meteorological context. Using a neural network approach we predict summer 2008 aerosol based on meteorological conditions. Predicted values are contrasted with observations. A statistically significant reduction of aerosol load is found in Beijing that decreases in magnitude and significance with increasing region size. Locally, the aerosol load ($log(AOT)$) was about 10–15% below the levels expected for the prevailing meteorological situation. The small size of this effect highlights the importance of regional aerosol transport.