

## Variability of submicron aerosol concentrations observed at a rural site in Beijing in the summer of 2006

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Measurements of aerosol and trace gases were made at a rural site (Yufa site) in Beijing in the summer of 2006. Size-resolved chemical composition of submicron aerosol was measured using an Aerodyne quadrupole aerosol mass spectrometer (AMS). The AMS data obtained from August 16 to September 9 are presented. Meteorological analysis indicates that the measurement period can be characterized as a cycle of stagnant period and cleaning event on a time scale of several days. This cycle was associated with passages of mid-latitude cyclones. Each stagnant period was drastically terminated by advection of clean air from north or northwest, followed by next stagnant period that was likely initiated by new particle formation and subsequent growth of those particles. The signal at mass-to-charge ratio ( $m/z$ ) 44, which is a good indicator of particle-phase organic acids, showed similar temporal variation with sulfate both in terms of mass concentration and size distribution during the stagnant periods, suggesting a strong linkage in the formation process between organic acids and sulfate in this region. The present study has revealed the large temporal variability of aerosol compositions in the Beijing region.