



## **CHANGE OF CHEMICAL COMPOSITION OF ATMOSPHERIC AEROSOLS IN BEIJING DUE TO AIR POLLUTION CONTROL**

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### **ABSTRACT**

Atmospheric aerosols samples were collected with a cascade sampler in a northern neighborhood of Beijing in November and December 1999. The elemental concentration and size distribution of aerosols were analyzed by using PIXE technique. The observed data are studied and compared with previous data at the same sampling site from February and March 1999. Based on the observations, the elemental concentrations and distributions and their changes are studied. Results show that S concentrations of atmospheric particles in the winter of 1999 decreased by 53% compared to the previous year. On the other hand, the concentrations of Cu in the winter of 1999 increased by 72% over previous winter and were mainly enriched in fine particles other in coarse particles. This is because clean fuels (such as diesel oil and natural gas) were used in heating period heating instead of coal in the winter of 1999. Concentration of Pb in atmospheric particles in the winter of 1999 decreased by 72% compared to the previous year due to introduction of non-leaded gasoline. These results demonstrate that the chemical composition and source of atmospheric particles have changed greatly in recent years. The pollution due to atmospheric particles in Beijing has been obviously lessened because of air pollution controls introduced by the Beijing municipal government.

**Keywords:** PIXE, Atmospheric aerosols, Elemental concentration, Heating period.