



## **Apportionment of urban aerosol sources in Chongqing (China) using synergistic on-line techniques**

Yang Chen and Fumo Yang

Chongqing Institute of Green and Intelligent Technology, CAS, Chongqing, China (chenyang@cigit.ac.cn)

The sources of ambient fine particulate matter (PM<sub>2.5</sub>) during wintertime at a background urban location in Chongqing (southwestern China) have been determined. Aerosol chemical composition analyses were performed using multiple on-line techniques, such as single particle aerosol mass spectrometer (SPAMS) for single particle chemical composition, on-line elemental carbon-organic carbon analyzer (on-line OC-EC), on-line X-ray fluorescence (XRF) for elements, and in-situ Gas and Aerosol Compositions monitor (IGAC) for water-soluble ions in PM<sub>2.5</sub>. All the datasets from these techniques have been adjusted to a 1-h time resolution for receptor model input. Positive matrix factorization (PMF) has been used for resolving aerosol sources. At least six sources, including domestic coal burning, biomass burning, dust, traffic, industrial and secondary/aged factors have been resolved and interpreted. The synergistic on-line techniques were helpful for identifying aerosol sources more clearly than when only employing the results from the individual techniques. This results are useful for better understanding of aerosol sources and atmospheric processes.