

**IDENTIFICATION OF TRANSBOUNDARY AND LOCAL POLLUTION IN LAHORE, PAKISTAN****B. Ghauri, A. Lodhi, M. Mansha***Pakistan Space & Upper Atmosphere Research Commission (SUPARCO), Karachi, Pakistan*

The transit of air pollution across international boundaries has been probably occurring more frequently. Therefore international and regional agreements are necessary to cover this problem. One of the most commonly discussed consequences of long-range transport is the formation of acidic constituents from effluents of gaseous sulphur dioxide and nitrogen oxides. High pollution concentrations were observed throughout the field study with SO<sub>2</sub> from 0.3 to 24.7 ppb, SO<sub>4</sub> 2 from 4 to 141 mg/m<sup>3</sup> and NO<sub>3</sub> from 3 to 74.5 mg/m<sup>3</sup> in aerosol during winter (fog days) of 25 Dec. 1999 to 8 Jan., 2000, and Jan., 9-11, 2001. Exceptionally high trace element aerosol concentrations were also observed, e.g. Se concentrations up to 258 ng/m<sup>3</sup>, As of 26 ng/m<sup>3</sup>, and Sb of 84.8 ng/m<sup>3</sup>, Pb concentrations up to several µg/m<sup>3</sup> were observed well above the USEPA guideline of 1.5 µg/m<sup>3</sup>. The coal related activities in the neighbor country is one of the major causes of winter dense fog in this region. This hypothesis was substantiated by Satellite Visible images and Indian statistics on SO<sub>2</sub> emissions. Later an extensive set of aerosol measurements were carried out for particulate matter (TSP, PM<sub>10</sub>). Gaseous pollution (SO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, CO<sub>2</sub>, CO, HC) and analyzed for lead at five sites representative of residential, industrial and commercial areas of Lahore city during 9 to 11 July, 2003.