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Title:	Understanding the ozone-nitrogen oxides chemistry using in-situ measurements at a site in Indo-Gangetic plain
Authors:	Kumar, Vinod (/jspui/browse?type=author&value=Kumar%2C+Vinod)
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Abstract:	Ozone, nitrogen oxides and carbon monoxide have been measured at a time resolution of 1 minute for one year at a suburban site (76.726°N 30.679°E) in the northern Indo Gangetic plain. Seasonality and diurnal variation of ozone and nitrogen oxides have been studied. Emission sources of nitrogen oxides have been identified by measuring at a receptor site. $\Delta[\text{CO}]/\Delta[\text{NO}_y]$ emission ratio for different sectors in different seasons and Regional CO back-ground of 214.4 ± 0.4 ppbV were calculated for the first time anywhere in India. Significant deviations from the chemical photostationary state of ozone and nitrogen oxides has been observed which is used to estimate the peroxy radical concentration in Indian air for the first time. The average peroxy radical concentration calculated was $293 \pm 233(1\sigma)$ pptV and the maximum concentration was 1134 ± 162 pptV which is significantly higher than peroxy radical levels reported anywhere in the world. Peroxy radical concentrations were found to increase with their higher production rates.
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