

Interactive comment on “High ozone at rural sites in India” by D. Chand and S. Lal

Anonymous Referee #1

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General Comments: Based on a limited number of surface ozone measurements made at an urban site (Ahmedabad), a rural site (region of Khambhat) and a free tropospheric site (Mt.Abu) in India during two short periods of one week of observations (22-27 Jan. 2001 and 30. Dec.2001-5.Jan.2002) the major objective of the paper is to document the observed high ozone levels in the daytime at a rural site in India. The topic of the paper covers an interesting field in atmospheric chemistry with regard to elevated ozone concentrations observed at rural sites downwind of urban (polluted) regions. However, the present paper contains only very little original and new material that really covers the major objective of the paper while the scientific analysis and interpretation of the observed features is rather poor. I recommend therefore the paper not to be published in ACP in its present form.

Specific Comments: The paper reports exclusively about ozone measurement made at 3 sites over two periods of one week of observations, however, a scientific interpre-

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tation and discussion is almost completely missing. The number of original material is rather limited. The observed features of diurnal variations of ozone at the urban and the free tropospheric sites are reported and discussed extensively elsewhere by Lal et al., 2000 and Naja et al., 2003, respectively. Really new, original measurements reported here are only the few diurnal ozone observations (over 2x one week period) made with a mobile laboratory truck moving during daytime downwind of the city of Ahmedabad in the region of Khambat. This experimental method is questionable because through the moving of the mobile laboratory it is not clear in how far the diurnal variations of ozone are influenced by the permanent changing of the location of the measurements. The authors don't discuss the representativity of their measurements which regard to the features observed. The missing of relevant measurements of NO_x or CO to interpret the results are not discussed. The results obtained are not adequate analyzed and interpreted. The authors do not analyse the observed features of diurnal variations of ozone in terms of photochemistry or transport. For example, photochemical aspects like the strong influence of NO_x concentrations on the observed diurnal ozone variations and the levels of NO_x to be expected are neither reported or discussed in the paper.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 3359, 2004.

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