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Interactive comment on "Accounting for local meteorological effects in the ozone time-series of Lovozero (Kola Peninsula)" *by* O. A. Tarasova and A. Yu. Karpetchko

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Review of ŞAccounting for local meteorological effects in the ozone time-series of Lovozero (Kola Peninsula)Ť by O. A. Tarasova and A. Yu. Karpetchko Atmos. Chem. Phys. Discuss., 3, 655-676, 2003 General Comment

The authors present a paper relating, by means of statistical filtering tools, physical and chemical processes important for surface ozone at a high-latitude site. However, the overall purpose of the statistical exercise shown is, in my opinion, somewhat obscured by the statistical technicalities. It is not clear (to me) whether the idea is to provide a tool for surface ozone (O3) forecast given a climatology of meteorological parameters or to sort out the data according to processes (photochemical production, long-range

transport, intrusions, etc.)? The representativity of the meteorological data is also a matter a discussion not fully assessed in the paper. Therefore, in my opinion, the paper requires further adjustments prior to publication. In particular, I suggest that the authors:

1) Put the exercise within a context of use: forecast and/or processes 2) Discuss the representativity of the meteorological and ozone data.

Specific Comments

Introduction *First paragraph. When discussing the coupling between chemical and meteorological processes. Have the authors considered which processes could be de-coupled at certain time or spatial scales? *Third paragraph. Which are the local meteorological processes that influence ozone you want to assess?

Measurements. *The description of the measuring site should be expanded and made more precise. For instance it is stated that "The station is located away from the strong pollutant sources" How much is ŞawayŤ, which are the pollution sources?. Also, the meteorology of the area should be better described or relevant literature should be referred to. *Have the meteorological data been scrutinized and described? Depending on the meteorological influences you want to assess, how representative are these data; is the time resolution (3 hours) enough?

Sections 3, 4 and 5. *If considering synoptical changes as reflected in daily averaged ozone values, shouldnŠt the meteorological data be filtered in the same way in order to avoid diurnal variations? Or is this taken care by the filtering procedure(s)? *How sensitive is the time scale separation to the set of data considered? *In addition to the seasonal cycles discussed, could the interannual variations be important?

Conclusions. What is to be learnt from this exercise?

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 655, 2003.