

Interactive comment on “Cold air outbreaks and their signature in the ozonometric data at the mountain station near Kislovodsk, Russia” by N. P. Chakina et al.

Anonymous Referee #2

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This paper focuses on the investigation of two cases with sharp changes in ozone concentration at the mountain station near Kislovodsk after the passage of cold fronts which are evidently caused by descending motions transporting substratospheric or stratospherically influenced air from the areas of tropopause folding. The authors present and analyse these two cases in a solid scientific way with sufficient evidence from meteorological and wv satellite data. The paper is well written and focused. Furthermore it refers to a region where there are only a few studies until now devoted to the investigation of the role of STE to the tropospheric ozone. However, there is a large number of articles in the literature over the last 30 years investigating case studies addressing the interesting topic of Startosphere-to-Troposphere Transport (STT). My major concern is that although the paper is scientifically solid there is no emphasis on

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the new findings and information that the authors add to the literature. Hence I would like to suggest the authors to highlight both in the abstract and in the conclusions the main points, which they believe that add to the already available literature of this topic. I believe that the paper needs a minor revision before publication.

Specific comment In the introduction (line 21) the authors refer to Stohl et al. (2000) paper where it is stated that stratospheric intrusions are significant for the tropospheric ozone budget. Could the authors be more specific? There is also a recent study in JGR (2003) on the estimate of the influence of STT on tropospheric ozone over the Alps based on Be-7 and Be-10 measurements from the EU project STACCATO.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 267, 2004.

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