

Interactive comment on “Stratospheric influence on MLT over mid-latitudes in winter by Fabry-Perot interferometer data” by Olga S. Zorkaltseva and Roman V. Vasilyev

Anonymous Referee #2

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In this paper, the wintertime atmosphere dynamics is analyzed, focusing on Sudden Stratospheric Warming (SSW) events. The data used were collected by the Fabry-65 Perot interferometer enabling the evaluation of the temperature and wind speed in the mesosphere-lower thermosphere (MLT) for four winter periods. These observations of the upper atmosphere have been compared with the corresponding measurements of the stratospheric dynamics obtained from the Era5 climate archive of the European Center for Medium-Range Weather Forecast (ECMWF). The results obtained are interesting and therefore the paper merits publication. However, there are weaknesses which can and must be removed, notably:

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1. The work done on the extraordinary event of the first major Antarctic SSW which had as result the ozone hole split in Sep. 2002 has been ignored and must be cited. (<https://link.springer.com/article/10.1007/BF02987584> ; <https://link.springer.com/article/10.1007/BF02980093>)

2. The Lomb-Scargle (LS) periodogram method used must be elaborated for the readers convenience, citing Lomb, N. R. 1976, *Ap&SS*, 39, 447 and Scargle, J. D. 1982, *ApJ*, 263, 835.

3. The use of the term “stationary” planetary waves (SPWs) is incompatible with the theory of the study and not accurate.

4. There are many spelling and grammatical errors in the text, and they need to be corrected.

In conclusion, I recommend publication after the above-mentioned revisions.

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