**The response of the polar tropopause to the events of major and minor sudden stratospheric warmings**

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The study was conducted on the response of the polar tropopause to a sudden stratospheric warmings event of major (2009) and minor (2016) type, using atmospheric radiosonde data and reanalysis data. The pressure at tropopause height were analysed before, during and after SSWs. The location of the stations was chosen so that they were located near the same latitude - 70 NH. This was done to consider the time lag of tropopause response to SSW which reveals in tropopause lowering in different hemispheres.

It is shown that during the major sudden stratospheric warming, the tropopause sinks at all stations, and there is a delay of about ten days between the maximum temperature in the stratosphere and the beginning of the tropopause lowering.

During the minor warming in 2016, the tropopause response less evident. There is no apparent lowering at the selected stations. Probably the reason is in the the location of the stratospheric polar vortex above.

The research was supported by Russian Science Foundation grant #23-17-00273, https://rscf.ru/en/project/23-17-00273/.