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## Interseasonal impact of Siberian snow cover formation rate on the baroclinicity and wave activity over Northern Eurasia

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Climate changes can cause a change of pattern of the atmospheric interaction between polar and middle latitudes, which can cause a change in the cyclone formation regime, which in turn can provoke extreme and hazardous phenomena intensification. Therefore, it is essential to understand the nature of the atmospheric interaction in question clearly.

Due to climatic features, it is precisely in the Siberian part of Eurasia that the most extensive snow cover forms, causing significant radiation cooling in this territory. The snow cover area, and consequently the intensity of radiation cooling, can vary significantly from year to year. It can make a significant impact on the interaction of the troposphere and lower stratosphere of middle and Arctic latitudes not only during the establishment of snow cover but also in the following winter season. Knowledge of the features and patterns of the manifestation of the influence of local disturbances (arising on the surface in the autumn due to the formation of autumn snow cover) on the atmospheric conditions of the following winter can be used as additional information when making seasonal weather forecasts.

The present study aims to assess the response of the troposphere and lower stratosphere over Northern Eurasia during the autumn-winter period to a rate of the snow cover formation in Siberia.

We separated the years with the sharp intensive and smooth slow snow cover formation. We analyzed for them the baroclinicity index and its components (the zonal and meridional potential temperature gradient and the Brent-Väisälä frequency) for various isobaric levels (up to 200 hPa), and Eliassen-Palm flux. The results obtained suggest that anomalies in the snow cover formation rate in Siberia can contribute and cause anomalies in atmospheric circulation in the autumn-winter period. However, there is no complete clarity regarding the mechanism of distribution of this influence.

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