



## **Thermal State of Permafrost in Russia: Results from IPY Activities**

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To characterize the thermal state of permafrost, the International Permafrost Association launched its International Polar Year Project # 50, Thermal State of Permafrost (TSP). Ground temperatures are measured in existing and new boreholes within the global permafrost domain over a fixed time period in order to develop a snapshot of permafrost temperatures in both time and space. This data set will serve as a baseline against which to measure changes of near-surface permafrost temperatures and permafrost boundaries, to validate climate model scenarios, and for temperature reanalysis. The results of the project based on data obtained from Russia during the IPY years (2007-2009) that include both field measurements and collected historical data are presented. Most of the observatories show a substantial warming during the last 20 to 30 years. The magnitude of warming varied with location, but was typically from 0.5 to 2°C at the depth of zero annual amplitude. Thawing of the Little Ice Age permafrost is ongoing at many locations. There are some indications that the late-Holocene permafrost has begun to thaw at some undisturbed locations in northeastern Europe and in northwest Siberia. Thawing of permafrost is the most noticeable within the discontinuous permafrost domain. However, permafrost in this region starts to thaw at some limited locations in the continuous permafrost zone as well. As a result, some northward displacement of the boundary between continuous and discontinuous permafrost zones was observed.