Geophysical Research Abstracts
Vol. 21, EGU2019-12190, 2019
EGU General Assembly 2019

Monitoring and forecasting of special hydrometeorological conditions, which ensure security and efficient operation of railway transport

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The goal of this work is to develop a software which would implement two technologies designed for reduction of railway transport vulnerability (including high-speed passenger traffic) and dedicated increase of its functioning efficiency by means of key improvement of the existing hydrometeorological support system, namely the technology of monitoring and forecasting of hydrometeorological variables and calculation of special parameters, as well as technology of visualization of decision support.
The project implementation is based on the use of heterostructural data for support of solution of the task of hydrometeorological forecasting quality improvement: data of automated meteorological stations; radar-location and satellite data.
The database of hydrometeorological parameters that is being formed represents information about spatiotemporal distribution of ground-based observation data, remote sounding and results of calculations under the hydrodynamic weather pattern.
For the users' convenience automated generation of warnings on threshold exceeding of hydrometeorological variables is provided in accordance with forecasting results.
The developed automated system of monitoring and forecasting of special hydrometeorological conditions may be adapted for other railway lines, as well as for other branches of the Russian Federation economy (including for special purpose hydrometeorological support of motor vehicles, oil and gas pipe lines, agriculture, etc.).