



The criteria of natural disasters, caused by hydro-meteorological natural phenomena in winter period in different urban regions of Russia

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Russia is one of the most spread countries in the world and it has the big number of different types of natural phenomena, which can cause natural disaster. Unfortunately, nowadays the number of victims of natural hazards and their influence on technological systems doesn't decrease. There are many reasons of that situation – both geographical and human. One of the reasons is the fact that the criteria of which meteorological or hydrological conditions can cause an emergency situation are equal for the whole territory of Russia. And that's why many dangerous situations are underestimated. The analysis of the distribution of criteria in Russia shows that only temperature phenomena (such as frost or heat) have really space differentiation.

The criteria of different natural disasters and hazards should depend on many factors – both social-economical and hydro-meteorological. Social-economical factors depend on human occupancy of territory, on the method of usage the land etc. So, it is clear, that in very populated areas (as big cities) the criteria should be different than in other areas. Hydro-meteorological factors deal with climatic and landscape conditions of the territories.

The geographical zoning of Russia was conduct and clusters with equal parameters were determined. That means that in these areas the same hydro meteorological characteristics can be used for. The new criteria for the number of natural phenomena (such as hale, snowfalls etc) were found. The updated criteria was determined both by analyzing the factual reports on emergency situation, caused by natural phenomena in each cluster and the characteristics from meteorological stations.

Updating criteria of natural disasters, taking into account different characteristics of the analyzing area can be wildly used in Russian ministry of emergency situation and Gydrometeorological services for predicting emergency situation for safety and sustainable development in different regions.*

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