



Natural hazard impacts on transport systems: analyzing the data base of transport accidents in Russia

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We consider a transport accident as any accident that occurs during transportation of people and goods. It comprises of accidents involving air, road, rail, water, and pipeline transport. With over 1.2 million people killed each year, road accidents are one of the world's leading causes of death; another 20–50 million people are injured each year on the world's roads while walking, cycling, or driving. Transport accidents of other types including air, rail, and water transport accidents are not as numerous as road crashes, but the relative risk of each accident is much higher because of the higher number of people killed and injured per accident. Pipeline ruptures cause large damages to the environment. That is why safety and security are of primary concern for any transport system. The transport system of the Russian Federation (RF) is one of the most extensive in the world. It includes 1,283,000 km of public roads, more than 600,000 km of airlines, more than 200,000 km of gas, oil, and product pipelines, 115,000 km of inland waterways, and 87,000 km of railways. The transport system, especially the transport infrastructure of the country is exposed to impacts of various natural hazards and weather extremes such as heavy rains, snowfalls, snowdrifts, floods, earthquakes, volcanic eruptions, landslides, snow avalanches, debris flows, rock falls, fog or icing roads, and other natural factors that additionally trigger many accidents. In June 2014, the Ministry of Transport of the RF has compiled a new version of the Transport Strategy of the RF up to 2030. Among of the key pillars of the Strategy are to increase the safety of the transport system and to reduce negative environmental impacts. Using the data base of technological accidents that was created by the author, the study investigates temporal variations and regional differences of the transport accidents' risk within the Russian federal regions and a contribution of natural factors to occurrences of different transport accident types.