

EGU21-3290

<https://doi.org/10.5194/egusphere-egu21-3290>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Debris flow impacts on infrastructure: analyzing the database of accidents

Elena Petrova

Lomonosov Moscow State University, Faculty of Geography, Laboratory of Snow Avalanches, Moscow, Russian Federation
(epgeo@mail.ru)

The presentation considers natural-technological accidents that were triggered by the impacts of debris flows on infrastructure facilities. As input data, the information collected in the author's database of natural-technological accidents and emergencies that occurred in the Russian Federation from 1991 to 2020 was used. Based on the statistical and geographical analysis of the data, the main types of natural-technological accidents caused by the impact of debris flows have been identified. Various linear structures are mostly exposed to the debris flows. The most vulnerable to the debris flow impacts are facilities of the transportation infrastructure, as well as power lines, pipelines, and other lines of communication. During the above period under consideration, road and railway accidents, traffic disruptions, accidents in power, warm, water, and gas supply systems caused by debris flows were registered in the database. Natural-technological accidents and emergencies due to debris flow impacts on the infrastructure were recorded in the Far East of the Russian Federation including Sakhalin and Magadan Regions, and Primorsky Territory, as well as in the Republics and Territories of the North Caucasus. The long-term average frequency of their occurrences was estimated; their seasonal distribution was investigated. The proportion of natural-technological accidents caused by the impact of debris flows, in the total number of events caused by other adverse and hazardous natural processes and phenomena, is relatively small. However, the potential danger of such impacts must be taken into account when constructing transportation and other lines of communications, especially in areas of increased risk of debris flows.