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AEROSPACE MONITORING OF ENVIRONMENTAL RISKS

Abstract

The need to apply the basics of information support to conduct comprehensive monitoring of natural and anthropogenic risks that lead to threats to the life of the population and the environment is an urgent issue of the present time. As is known, environmental risks include both slow-moving and rapidly developing processes. This article informs about the possibilities of using space technology methods in solving environmental risks of such phenomena as forest fires, landslides, mudslides and floods. Environmental risk assessment is a systematic and consistent consideration of all aspects of the impact of the factors analysed. Therefore, a comprehensive analysis of all the factors that geo-information technologies will help to achieve is needed. It is in the geographic information system that a variety of information resources can be assembled in a single environment and scenarios of interaction and mutual influence of a multitude of factors in the context of the problem under consideration can be developed. In that regard, remote sensing data played an important role by providing objective information on phenomena on the Earth's surface at various scales and in time intervals. Currently, we are witnessing large-scale environmental disasters: forest fires, floods, landslides, mudslides, avalanches, tsunamis and the terrible consequences of earthquakes. Clearly, forecasting and preventing such phenomena is the most urgent task, as well as playing an important role in informing decision-making. People's lives and environmental risks depend on the efficiency and timeliness of warnings. We present a study on multi-time satellite images of the risks of flooding of territories adjacent to the Kura River as well as the results of a comparative analysis indicating possible causes and territories in case of repeated flooding. The studies are based on both multi-spectral imagery from the Azersky satellite and the results of digital elevation model processing. For the study of the risks of landslides and mudslides on the mountain rivers Kurmukhchay and Kish, geomorphological analysis of river territories was used on the basis of a digital model of relief and terrain created during the processing of space images. The slow-moving ecological processes include the problem of desertification, which is a threat to human life, as well as flora and fauna, leading to negative changes in landscapes.