

SIMULATION OF DISPLACEMENT OF LANDSLIDES ON THE MATERIALS OF GEODESIC OBSERVATIONS AND ENGINEERING-GEOLOGICAL SURVEYS

Alexandra A. Islyamova

Siberian State University of Geosystems and Technologies, 10, Plakhotnogo St., Novosibirsk, 630108, Russia, Graduate, Department of Space and Physical Geodesy, phone: (983)230-19-46, e-mail: shatsaa@mail.ru

Valery S. Khoroshilov

Siberian State University of Geosystems and Technologies, 10, Plakhotnogo St., Novosibirsk, 630108, Russia, D. Sc., Professor, Department of Space and Physical Geodesy, phone: (383)343-29-11, e-mail: khoroshilovvs@mail.ru

The article discusses the possibilities of applying modeling of the stress-strain state of slopes to predict landslide hazard, which is very important for the successful implementation of all subsequent stages of design, construction and operation of engineering structures. The article considers the existing approaches and methods used in the process of solving the problem, and determines the study as the type of mathematical modeling of the stress-strain state of a landslide body by the finite element method. It is shown that the selection of specific mathematical expressions for all subsequent calculations is carried out depending on the specific type of landslide. The mechanisms of deformation and destruction of the slope under the action of gravitational forces are shown using the data of geodetic observations and engineering-geological surveys. As a result of the studies performed, calculations were made on several models illustrating the behavior of the soil mass of a landslide-prone slope. Stress patterns were obtained for a simple slope with a steepness of 35°, which coincide with the previously published data of the physical experiment for the real open pit slope.

Keywords: landslide, geodetic observations, mathematical modeling, stress-strain state, landslide slope, elastic properties

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