ANALYSIS OF METHODS AND TOOLS FOR STUDYING THE DYNAMICS OF DISPLACEMENT OF LANDSLIDES

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The implementation of large-scale construction projects requires particular attention to the study of exogenous geological processes in complex geomorphological conditions. Slope processes (development of landslides, landslides, avalanches) are the most widespread and dangerous geological processes. Mechanisms of their formation, identification, as well as regular control and monitoring of their condition seem to be the most important elements for a qualitative assessment of landslide phenomena, including the timely identification of the areas of greatest danger and elimination of their consequences. The article presents the currently most common methods and means of identifying landslide areas in order to manage risks efficiently. The possibilities of traditional approaches using remote sensing technologies and the possibilities of ground (TLS) and airborne (ALS) laser scanning methods for studying landslide phenomena are considered; methods of photogrammetry, geodesy, geophysics, geodynamics and mathematical modeling; GIS capabilities in combination with machine learning algorithms, as well as classical methods of mathematical statistics with complex processing of heterogeneous data.

Keywords: landslide slope, monitoring, geodetic observations, digital elevation model, GIS, mathematical modeling

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