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Abstract title: Decision support system for landslide hazard mitigation on rock slopes

Presenting author: Jan Klimeš

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Decision support system for landslide hazard mitigation on rock slopes

Klimeš J.¹, Stembekr J., Dufka D.²

¹ *Institute of Rock Structure and Mechanics CAS, v.v.i., V Holešovičkách 41, Praha 18209, Czech Republic, jklimes@centrum.cz*

² *Strix Chomutov, a.s. 28. října 1081, Chomutov 430 01, Czech Republic, dufka@strixchomutov.cz*

Abstract

Slope movements on the rock slopes (e.g. rock falls or rock slides) belong among the most dangerous slope processes since even small volume events (involving single boulders) may have largely damaging effects on infrastructure or may cause serious injuries. This phenomenon is very often also highly localized problem, which demands for local solutions by local governments which rarely include experienced personnel. Rather high costs of almost any structural mitigation measure possibly applied on rock slopes makes mitigation process subject to many political and economic interests which not always result in the best and most effective slope stability solution. The project NEMETON aims to provide easy to use and free web based tool for local authorities and also for project companies to provide basic information about degree of hazard, possible mitigation measures and their basic technical and economic characteristics. The system includes interactive interface for intuitive description of rock slope stability problem allowing even inexperienced user to provide sufficient information to be advice for future steps leading to cost effective solution of the problem. At the same time, the basic information will help the project and technical companies to get a basic idea about probable cause of the problems, possible slope stability solutions and the technical conditions of the solution. In the second step, more detailed geotechnical information are inserted to provide detail information for geotechnical professionals to assess the slope stability conditions and to select the best suited mitigation solution using the best suited technology. The success of the decision support system is ensured by involvement of wide spectrum of professionals for its design and the result verification. System is designed to accommodate any technical solution provided by otherwise competing companies to find the best mitigation option for defined problem. The presentation will introduce you into the rock slope stability problems in the Czech Republic, their typical technical solutions, basic database structure of the NEMETON system, results of its implementation and further research steps leading to the full operation of the NEMEOTON program welcoming broader European cooperation in development and using of the.

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