

Numerical Analysis of Rapid Drawdown in Dams Based on Brazilian Standards

Authors : Renato Santos Paulinelli Raposo, Vinicius Resende Domingues, Manoel Porfirio Cordao Neto

Abstract : Rapid drawdown is one of the cases referred to ground stability study in dam projects. Due to the complexity generated by the combination of loads and the difficulty in determining the parameters, analyses of rapid drawdown are usually performed considering the immediate reduction of water level upstream. The proposal of a simulation, considering the gradual reduction in water level upstream, requires knowledge of parameters about consolidation and those related to unsaturated soil. In this context, the purpose of this study is to understand the methodology of collection and analysis of parameters to simulate a rapid drawdown in dams. Using a numerical tool, the study is complemented with a hypothetical case study that can assist the practical use of data compiled. The referenced dam presents homogeneous section composed of clay soil, a height of 70 meters, a width of 12 meters, and upstream slope with inclination 1V:3H.

Keywords : dam, GeoStudio, rapid drawdown, stability analysis

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