Study and comparison of analysis methods of embankment dam stability in GEO STUDIO

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Abstract

Analysis of dam slope stability is one of the most important needed analyzes in design of soil dams. Considering present common and various methods about analysis type and applying limited components and limited difference and…,the model analyzing and discussable difference among obtained results from each one of the methods, the choice of style and sometimes analytical software has been examinable issue behalf of scientists. In this study a dam with geo technical features, same conditions and geometry (through two methods including Grid & Radius and Entry & Exit) with Slop/W program, and resulted confidence coefficients against their slip and failure were compared.

Keywords: embankment, analysis of stability, Geo Studio, confidence coefficient

1. INTRODUCTION

Importance of restrain of surface water

Scientifics predicted that in century 21 water would have as value as oil. Iran cover 1% of world population while at the same have 0.36 percent of recyclable water resources in itself. World average rainfall is 86 cm however in Iran it is 28-25 cm. So our country is mid-arid and regarding limited water resources, should benefit the most of it. Considering the importance of restrain of surface water and urgent necessity to dam construction, the analysis of gable roof stability and various analysis methods attain more attention. It is used various methods for analyzing gable roof stability from early proposed models by Fellenius to limit balance methods including Bishop, Ordinary, Janbu and also Morgenstern-price spencer all usable for obtain confidence coefficient against failure and slip. However the biggest challenge of scientists is the contrast of obtained analysis results through various methods. Software Slop/W , one of the Geo Studio subgroup, is one of the most applicable analysis program for study slope stability against failure and slip and benefits from limit balance- graphic methods. In current study it is acquired a dam with geo technical features, same conditions and geometry (through two methods including Grid & Radius and Entry & Exit) with Slop/W program, and finally the model and confidence coefficients results against their slip and failure were compared.