

The effect of faults on the behavior of the Ourkiss Algeria reservoir dam

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ABSTRACT

Earth dams' construction on active faults poses a risk of instability. The Ourkiss earth dam is a heterogeneous type with clay and alluvial materials with a waterproof geomembrane screen on upstream facing of dike and on dam sides, built 14 km south Ain Fakroune city. Because of its location near active faults, stability analysis of this dam is one of the most important parts under static and quasi-static conditions, especially in case of a possible earthquake effect. In this study, normal and reverse dip-slip faults rupture propagation effect located at dike base center and at a depth $D=60\text{m}$ at structure foundation base with various dip angles was been analyzed. Numerical analyzes results obtained indicate that presence of normal faults at a certain depth induces an increase in safety coefficient and consequently dam stability, their value decreases in case of a reverse fault. Even if fault point is located some distance from dike base, this implies that reverse faults propagation can produce instability

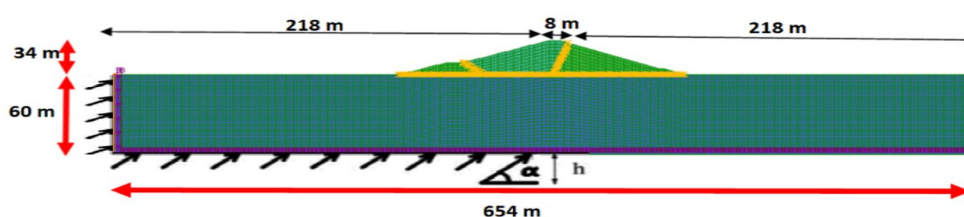


Fig. 1 Presentation of adopted digital model

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