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STUDY OF THE EFFECT OF SEISMICITY COMPONENT ON THE GLOBAL BEHAVIOR OF A ROLLER COMPACTED CONCRETE DAM

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Abstract :

Earthquakes play an important role on the stability of dams and the majority of studies neglect the introduction of both horizontal and vertical components at the same time for the dynamic study. Our study explores the effect of seismicity on the overall response of dams taking into account the self-weight, the hydrodynamic load, and the uplift pressure at the base. We implement a 2D nonlinear dynamic model on the ABAQUS finite element software and apply to the Boussiaba RCC dam, located in East Algeria. We compute the stress distribution for horizontal, vertical and both components. The results show the acceleration component affects considerably the maximum stress location for three cases.

Keywords: *Finite element model ,Hydrodynamic pressure, RCC dam ,uplift pressure.*
