

**Abstract:**

In this study, we attempted to investigate the three-dimensional analysis of the simultaneous effects of earthquake and water on dam destruction under conditions of presence of sediments with different gender and depth by MIKE software. As the world approaches the critical point of safe water scarcity and international organizations warn of severe water scarcity in some countries, especially in arid and semi-arid countries, more attention has been paid to increased rainfall programs. In addition, as consumable water resources require sustained increase, dams are considered as a resource for permanent use.

Due to the importance of dams in water resources management based on the geographical location of issues such as how sediments are formed in the dam and their deposition in different ways in different conditions is important and considering the seismicity of our country earthquake and Non-destruction of the dam on water supplies is important.

In this thesis, the amount of sediments, water and earthquakes have been analyzed separately and simultaneously over the Dez dam in different years using ABAQUS and FLOW3D software. The earthquake is in addition to the additional hydrodynamic forces of water and wave forces. The dynamic overpressure of the sediments at altitudes causes serious damages to the dam body and, based on the results, the maximum displacement in the dam canopy for the height of the sediment is 10 m to 4.3 times higher than the condition considered. The effect of sediment accumulation time on the pressure applied on the dam body has been increased and for 3 months, 1, 5 and 10 years respectively, the pressure has increased 3, 5.5 and 7 times, respectively.



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**The Thesis Submitted for the Degree of MSc  
(in the Field of Water Resourcement Management)**

**Three Dimensional Analysis of Simultaneous Effect of Earthquake and Water on Dam  
Destruction in Conditions of Sediments of Different Gender and Depth Using Software**

**(Mike 21) Case Study**

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**September 2019**