

عنوان مقاله:

Measurement and Computation of Dynamic Response of Arch Dams Including Interaction Effects

محل انتشار:

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تعداد صفحات اصل مقاله: 14

نویسندگان:

Yusof Ghanaat - *QUEST Structures*

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خلاصه مقاله:

A computation and experimental study of dam-water-foundation interaction conducted at Longyangxia Dam in China is described. In the primary tests, the dam and its retained water were excited by detonating large explosive charges in shallow water upstream from the dam. The dam and water responses to the explosives were recorded by accelerometers, pressure sensors, and three-component seismographs. In secondary tests, the average reflection coefficient of the reservoir boundaries was measured using a newly developed procedure based on the acoustic reverberation concept. The results obtained indicate that explosive detonations appear to be the best means for exciting the dam-water-foundation system, and that an acoustic reverberation technique offers a practical procedure for measuring the overall reflection coefficient for the entire reservoir. Dam displacement and acceleration responses and hydrodynamic pressures due to acceleration signals recorded at the base of the dam were computed using current analytical procedures. Generally, reasonable agreement between the measured and computed responses was obtained but the prediction could be improved if non-uniform input motion could be defined and used.

کلمات کلیدی:

Arch Dam, Dam-water-foundation Interaction, Accelerations, Hydrodynamic Pressures, Spectrogram, Reflection Coefficient, Absorption coefficient, Acoustic Reverberation, Explosives, Blast-generated Motions, field measurements

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