

## عنوان مقاله:

Evaluation of RPI Centrifuge ۲D Shaker and Biaxial Soil Response

## محل انتشار:

ژورنال مهندسی ژئوتکنیک و حمل و نقل، دوره 5، شماره 1 (سال: 1398)

تعداد صفحات اصل مقاله: 13

## نویسندگان:

Omar El-Shafee - *Civil and Environmental Engineering Department, Rensselaer Polytechnic Institute, Troy, NY, USA*

John Lawler - *Civil and Environmental Engineering Department, Rensselaer Polytechnic Institute, Troy, NY, USA*

Tarek Abdoum - *Civil and Environmental Engineering Department, Rensselaer Polytechnic Institute, Troy, NY, USA*

## خلاصه مقاله:

A series of centrifuge tests with base shaking were conducted on the ۱۵۰ g-ton Centrifuge at Rensselaer Polytechnic Institute to study the effect of biaxial base excitation on sand deposits, and to evaluate and assess the performance of the newly commissioned ۲D shaker. The study used biaxial base shaking on loose and medium dense sand deposits. Two centrifuge models of ۳۲ and ۲۶ cm-thick, level, Nevada sand deposits, were built in ۲D laminar box and subjected to base excitation inflight at ۲۵g to simulate ۸ and ۶.۵ m soil stratum in the field. The models were subjected to uniaxial and biaxial base shakes using artificial and real earthquake records. Several configurations of soil models were calibrated, including dry and saturated models of various densities, using pore fluid with viscosity ۲۵ times higher than water, which was used to simulate water saturated soil deposits in the field. It was found that the acceleration amplitude increases as the base shake propagate through the soil with noticeable difference between uniaxial (۱D) and biaxial (۲D) models, and that the shaker is capable of applying a variety the base excitations successfully with minimal differences compared to the targeted input motion.

## کلمات کلیدی:

Centrifuge, ۲D model Shaking, Physical modelling

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1840960>

