

عنوان مقاله:

Effect of Domain Frequency of Soil-Tank to Seismic Response

محل انتشار:

فصلنامه زمین شناسی مهندسی، دوره 8، شماره 1 (سال: 1393)

تعداد صفحات اصل مقاله: 20

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خلاصه مقاله:

This study in focused on the effects of foundation on the seismic behavior of tank-foundation-soil system, and describes that the frequency of the soil-structure should be away from the domain frequency of the Fourier amplitude. For this purpose, three dimensional tank was modeled by ABAQUS software and numerical investigations are performed on two vertical, cylindrical tanks with different ratios of height to radius ($H/R=2$ and 0.66). Two types of soils (medium and stiff sandy soil) were considered as a tank foundation. Results show that tall tank, because of excessive settlement and uplifting should be anchored. Also as the ratios of height to radius decrease tank became self anchored and could be stable on seismic load. The Fourier amplitude of the time history had an important effect on the tank response. It was also concluded that by increasing the soil strength parameters due to reducing amplification effect, tanks have better performance.

کلمات کلیدی:

Unanchored liquid storage tank, Fourier amplitude, Settlement, Uplifting, Domain frequency

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<https://civilica.com/doc/280918>

