

# **Soil-structure Interaction in Siesmic Analysis**

## **Abstract**

Conflicting assumptions exist between structural engineers (who assume flexible structures on rigid block foundations) and geotechnical engineers (who assume flexible foundations supporting rigid structures). Thus a soil-structure interaction is a step that removes many of the assumptions and thus clears reality to a greater extent. However such a model cannot be analytically analyzed. We need to anatomize and analogize it.

A conceptual (analogical) 1D model for soil structure interaction is presented and its results are compared with 3D dynamic soil-structure finite element analysis of a structural example. The aim is to focus on how to calculate the period of the structure which is fundamental to estimate effect of earthquake loads on the structure; and to investigate effect of variation of stiffness on soil-structure interaction.