Chair of Computational Modeling and Simulation
TUM Deparment of Civil, Geo and Environmental Engineering
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Identification and Visualization of Seismic Wave in 3D Soils

Project Characteristics

Modeling:
Mathematics:
Programming:
Science:

Task

During seismic events, different waves propagate through the soil and create a complex vibration pattern. For a linear elastic continuum, the problem is described using the Lamé equation and different wave types can be analyzed [1]*. The aim of the project is to identify the different waves for seismic events and to create an algorithm to visualize them.*

GENERAL INSTRUCTIONS:

- Get familiar with the Lamé equation and its solution (in form of a Matlab code)
- Extend an existing code to identify and isolate the different wave types in GiD [2]
- Create a visualization concept, that allows a better understanding of the phenomenon

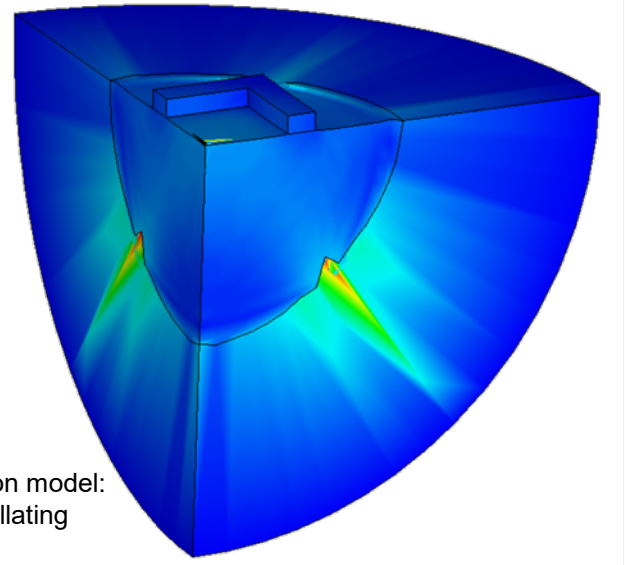

Figure 1: Cut of a 3D soil-foundation model: Propagation of waves from an oscillating foundation strip.

[1] *Lecture notes of the course: "Soil vibrations"*
[2] *https://www.gidhome.com/whats-gid/*

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