

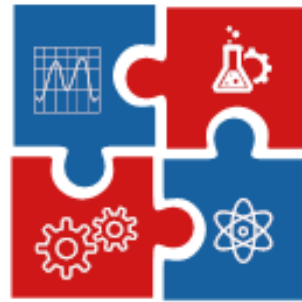
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**CNN TECH**

**„International Conference of Experimental and  
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# **Programme and The Book of Abstracts**

**04 – 07 July 2023**

**Zlatibor, Serbia**

**„International Conference of Experimental and Numerical  
Investigations and New Technologies“**

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# THE INFLUENCE OF PARAMETERS OF SAND SOIL ON STATES PH 2D FRAME ON SEISMIC RESPONSE

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## Abstract

*During earthquakes that exceed the designed level of the structure, the structure gets damaged. Here, the structure-foundation-soil is considered as a system, and the effect of the soil on the piles can be replaced by nonlinear p-y curves. Work on this topic began as early as 1957, based on the analogy between the triaxial test and the form of soil failure, and during the 1970's, a number of researchers made significant progress in the development of appropriate models for different types of soil. Eurocode 8 pays special attention to the selection of earthquakes as a set of accelerograms. For areas within a radius of several hundred kilometers from central Romania and its southern part, the Vrancea hypocenter has a significant influence. In North Serbia and its surroundings, other sources of earthquakes are also possible, but when choosing accelerogram, the response spectra of several Vrancea records should also be used. The SSI model itself, where the soil is replaced by p-y curves, even though it might look complicated, it is significantly simpler and leads to faster results than integral 3D models. By using adequate soil parameters, fairly reliable data can be obtained on the degree and distribution of damage to the SSI system, like plastic hinges. In soil models used for clean sand, the curves used seem significantly more reliable than clayey ones, but here too caution is needed because the degree of compaction (relative density) has a significant effect, and the way of determining it is still not reliable.*

## Keywords

Soil pile structure interaction SPSI, nonlinear p-y curve, Vrancea earthquake, PH - Plastic Hinge, SSI - soil structure interaction.

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