International Advanced School Soil-Structure Interaction in OpenSees, SSI-OS strategies, applications and perspectives 9-11 September 2024

Motivation and goal

OpenSees is an evolving numerical framework for advanced assessment of civil engineering structures against natural hazards, in which dominant soil-structure interaction features can be simulated through multiple levels of complexity.

We will explore soil-structure modelling in OpenSees, focussing on critical issues of the implementation. After a short introduction to OpenSees, the development of nonlinear dynamic analyses is the main goal of this path. New-generation approaches for assessing the dynamic performance of soil-structure systems will be described.

With respect to 2023 SSI-OS, in the present edition the discussion of the numerical strategies to soil-structure interaction will be extended to the use of tools for regional analysis and artificial intelligence-based assessment. Several example applications will be provided, supported by hands-on experience and working groups.

Organising Committee



Davide Noè Gorini





Pedro Arduino



Guido Camata

Dr. Silvia Mazzoni Prof. José Abell Eng. Giuseppe Lombardi Dr. Yu-Wei Hwang



Massimo Petracca

Dr. Domenico Gallese

Dr. Faisal Nissar Malik

Dr. Tony Fierro



Domenico Gallese

ISSMGE TC 203 Earthquake SIMSG



board &

lodging

Associazione reotecnica



Hotel Domus Pacis A



ASDEA

SOFTWARF

TC 309 Machine Learning TC 209 Offshore Geotechnics TC 204 Underground Construction





SCIENTIFIC PROGRAMME

September 9 Monday

<u>Session 1</u> Basics of modelling soil-structure interaction in OpenSees P. Arduino, D.N. Gorini, D. Gallese, M. Petracca

<u>Session 2</u> Coupled modelling: from theory to practice OpenSees D.N. Gorini, J. Abell, D. Gallese, Y.W. Hwang

<u>Interacting lecture</u> Implementing the static and seismic analysis of a coupled soil-bridge system - D.N. Gorini

Wednesday

<u>Session 5</u> Developing OpenSees and advanced applications T. Fierro, P. Arduino, M. Petracca, F. McKenna

<u>Round table</u> Applications, strategies and new trends

Tuesday -

<u>Session 3</u> Parallel computing: general settings and optimisation D.N. Gorini, J. Abell, S. Mazzoni

<u>Working groups</u> Advanced features of coupled modelling P. Arduino, G. Lombardi, J. Abell

<u>Session 4</u> Time-domain decoupled modelling: from theory to practice P. Arduino, D.N. Gorini, F.N. Malik

Interacting lecture Application of new-generation practice-oriented approaches to a soil-bridge system P. Arduino, D.N. Gorini

Registration

PTEMBE

Registration to the School is mandatory through this <u>form</u>. Registrations will be accepted subject to availability (maximum number of attendees = 100).

The payment of the fees can be made after the acceptance of registration and, however, within the period March 15-July 30.

<u>Stay tuned!</u>

More information about fees, board & lodging at Hotel Domus Pacis will be provided soon. Sign in at this <u>link</u> to set up the alerts.

