Nell'ambito delle attività del **Corso di Dottorato** in Ingegneria Strutturale Geotecnica e Rischio Sismico

22-25 luglio 2019, ore 10:00-13:00 e 14:00-17:00

Dott. Ing. Paolo Ricci
Ing. Mariano Di Domenico
(DiSt - Università degli Studi di Napoli Federico II)

terranno un corso breve dal titolo

Nonlinear modeling of structures using OpenSees

The course provides basic elements of nonlinear modeling of structures using the OpenSees (Open Software for earthquake engineering simulation) platform. The focus is on nonlinear modeling for seismic response analysis. OpenSees is an open source software, widely recognized in earthquake engineering research community, which allows code development and contributions by the single users, making it very suitable for advanced modeling and academic research activities. The course is structured in theory and practice lessons. The theory lessons recall basic principles of structural modeling and provide elements of nonlinear modeling, with particular emphasis on frame structures subjected to seismic action. The practice lessons allow the construction of a numerical model reproducing a simple 3D structure and the execution of the main analyses for earthquake engineering purposes, from eigen to nonlinear static and dynamic. The first part of the course is focused on the introduction to the software, with basic concepts regarding the object-oriented approach including the definition of geometry, elements, and materials of the numerical model, response recorders and analysis commands. Then, basic elements of linear and nonlinear modeling approaches – from fiber-based distributed plasticity to lumped plasticity macro-models for frame members – are provided. Brief notes on special elements/materials/commands are provided, too, including example modeling approaches for base isolation systems, nonstructural masonry infill elements, and element removal for progressive collapse simulation. Finally, the main commands for the analysis of structural response under seismic action are illustrated, i.e. eigen, nonlinear static and nonlinear dynamic analysis, and corresponding output analysis.

Via Claudio, 21 – ed. 6 - aula Manfredi Romano (1° piano)

Tutti gli interessati sono invitati a partecipare

Il Coordinatore del Dottorato
Prof. Ing. Iunio Iervolino