Università degli Studi di Napoli Federico II

Scuola Politecnica e delle Scienze di Base

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

29-31 ottobre 2019, ore 15:00-17:30

Prof. Francesco Marotti de Sciarra
Dott. Francesco Paolo Pinnola

(DiSt - Università degli Studi di Napoli Federico II)

terranno <u>seminari</u> su

Random vibrations and Monte Carlo simulations

Often in dynamic analysis of complex structures, when several variables must be taken into account, a non-deterministic approach is needed. In this context, an important issue is related to the well-known random vibrations. In such kind of problems, the structural system is forced by an external loads modeled as random processes. In this manner the response in terms of function (in the continuous model) or vector (in the discretized models) displacements is random as well, and the dynamic analysis must be driven with the aid of proper tools of the stochastic mechanics. In this regards, an important tool is represented by Monte Carlo simulation. Such approach allows to obtain a complete characterization of the response of complex structures in terms of output process and in terms of statistics parameters. The present course aims to provide new concepts inherent this kind of stochastic analysis providing some useful mathematical tools. These concepts may be useful in the solution of advanced problems in civil and mechanical engineering. Numerical applications will be also presented and solved with the aid of advanced calculus tools (Matlab and Mathematica).

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