### **University of Naples Federico II** Department of Structures for Engineering and Architecture



Ph.D. Program in Structural Engineering, Geotechnics and Seismic Risk

Short course for Ph.D. students

# Hysteretic Mechanical Systems: Phenomenological Models,

## **Computational Techniques and Experimental Characterization Program**

## **Opening Seminar**

Mechanical hysteresis phenomena

Lecture 1 - Phenomenological models

Vaiana - Rosati model of hysteresis

Generalized Bouc - Wen model of hysteresis

**Lecture 2 - Computational Techniques** 

Numerical time integration methods

Continuation methods based on the Poincaré map

**Lecture 3 - Experimental Characterization** 

Static tests

Dynamic tests

**Closing Seminar** (K.N. Kalfas)

Pressurized sand dampers: experimental tests and phenomenological modeling

19 April 2024

10:30 am - 12:30 pm CET 13:30 pm - 15:30 pm CET

22 April 2024

10:30 am - 12:30 pm CET

13:30 pm - 15:30 pm CET

23 April 2024

10:30 am - 12:30 pm CET

24 April 2024

13:30 pm - 15:30 pm CET

10:30 am - 12:30 pm CET

13:30 pm - 15:30 pm CET

29 April 2024

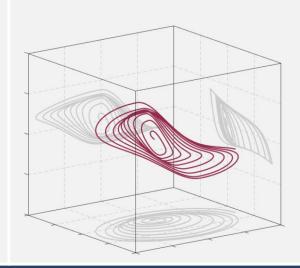
16:30 pm - 17:30 pm CET

#### Registration

Ph.D. students from Unina Federico II and other Italian or foreign universities, who are interested in attending the short course, on-line (MS Teams) or in-person, are invited to send an e-mail to:

nicolo.vaiana@unina.it.

There are NO registration fees.



dr. N. Vaiana – University of Naples Federico II

Prof. B. Carboni – Sapienza University of Rome

Invited International Speaker:

dr. K.N. Kalfas – The University of Texas at Tyler (USA)