Università Politecnica delle Marche

PhD Program in "Civil, Environmental and Building Engineering, and Architecture"

SEMINAR ANNOUNCEMENT

Nonlinear dynamics of a galloping-based energy harvesting system

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Wednesday 28 Mary 2025 at **11.00**
Room: Aula Seminari DICEA, sezione Strutture, Q150 (DICEA-150/stru)

Usually, fluid-structure interaction yields undesired self-excited vibrations. Hence, a series of studies have been carried out aiming at suppressing them. Among the solutions for passive suppression, nonlinear energy sinks (NESs) appear as one of the most investigated ones. A NES can be understood as a substructure attached to the main one by means of an essentially nonlinear coupling and a dissipative element. The motion of the host structure induces dynamic responses on the NES, where the energy is locally dissipated. Recently, some works focus on energy harvesting from the NES. This seminar exploits the simultaneous problem of energy harvesting and galloping suppression by means of an electromagnetic rotative nonlinear energy sink. The mathematical model is presented and some numerical results regarding sensitivity with respect to the parameters of the mathematical model are discussed.

All interested people, particularly PhD students, are invited to attend the seminar

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