Instabilities and nonlocal multiscale modelling of materials

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AVVISO DI SEMINARIO
Si comunica che lunedì 22 gennaio 2018 a partire dalle ore 9.00 si terrà presso l’aula R2 (via Mesiano 77) il seguente seminario

Coupled Mode Interface and Nested Bloch Waves
Dr. Domenico Tallarico
University of Liverpool, UK

In this talk we present preliminary results on a model of waves through a structured coupled-mode interface. The latter couples flexural and longitudinal modes of deformation of beams, which reveals several resonance phenomena.

The transmission problem, incorporating an “elastica” type interface, includes analysis of a wave incident on a compressed buckled beam. Both linearised time-harmonic and non-linear transient formulations have been considered. Explicit representations are deduced for the transmission and reflection coefficients and a transmission resonance has been identified.

Furthermore, a periodic structure containing inertial interfaces, which incorporate configurational forces that couple flexural and longitudinal deformation modes, has been considered. A special type of forced wave called “nested wave” is discussed in detail. The solution has been given in a closed analytical form, and resonance phenomena have been identified.

Tutti gli interessati sono invitati a partecipare.

Il seminario è organizzato dal gruppo di Scienza delle Costruzioni (D. Bigoni, L. Deseri, N. Pugno, A. Piccolroaz, F. Dal Corso, M.F. Pantano, R. Springhetti, D. Misseroni)

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