



UNIVERSITÀ DEGLI STUDI
DI TRENTO

Dipartimento di Ingegneria Civile,
Ambientale e Meccanica



Instabilities and nonlocal
multiscale modelling of
materials

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AVVISO DI CORSO

Si comunica che **venerdì 11 luglio a partire dalle ore 11.30**
si terrà presso l'aula **R2** (via Mesiano 77) il seguente seminario

Nonlinear and Adaptive Metamaterials: Concepts and Experiments

Prof. MASSIMO RUZZENE

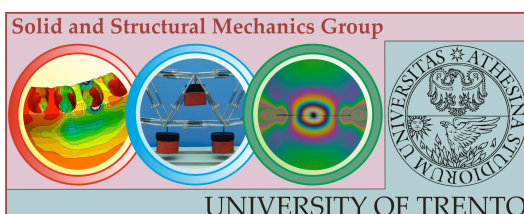
Georgia Institute of Technology, Atlanta, USA

Abstract: Metamaterials consist of engineered microstructural assemblies that exhibit superior properties in comparison to less-composed or naturally-occurring materials. Their unusual wave properties include band-gap behavior, response directionality, left-handedness, and negative acoustic refraction, among others. These features, and their application for the design of acoustic filters, waveguides, logic ports, and ultrasonic transducer arrays, motivate the investigation of elastic wave propagation in micro-structured media.

The seminar illustrates the directional properties of periodic media, as defined by their ability to direct waves in preferential direction. Such properties are first illustrated on simple spring-mass systems, and subsequently demonstrated in complex structural lattices operating in linear and nonlinear deformation regimes. In addition, periodic arrays of electromechanical resonators, and lattices that undergo topological changes resulting from structural instabilities are discussed as examples of adaptive metamaterials. Tunable local resonating systems, and local instabilities are investigated as effective means to provide the considered periodic assemblies with adaptive bandgaps and wave steering characteristics.

Tutti gli interessati sono invitati a partecipare.

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



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