



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 SEMINARIO

Si comunica che **giovedì 26 ottobre 2017 a partire dalle ore 11.30**  
si terrà presso l'aula **R2** (via Mesiano 77) il seguente seminario

### Elasticity with Gradient Disarrangements

**Prof. David Ross Owen**

*Carnegie Mellon University, Pittsburgh, USA*

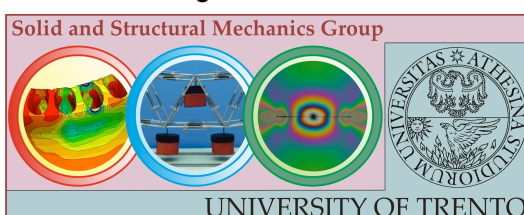
The need to enrich and broaden the classical theory of finite elasticity with information from submacroscopic levels arises in a variety of settings, including the mechanics of single crystals, granular media, liquid crystals, and fine phase mixtures. In this talk I will describe a method for such broadening that is based on the multiscale geometry of first-order and second-order structured deformations. Emphasis will be placed on the manner in which structured deformations can capture the effects at the macrolevel of submacroscopic slips and separations and can describe the presence of defects. Although the general field theory underlying this approach will not be covered, two simpler instances of the field theory related to strain-gradient plasticity and strain-gradient elasticity will be discussed.

#### *Biosketch*

David Ross Owen received his BS degree in Mathematics from the California Institute of Technology-CALTECH. He then moved Brown University, where he eventually received his Ph.D. in Applied Mathematics. From September 1967 until now he has been on the faculty of the Department of Mathematical Sciences at Carnegie Mellon University, in Pittsburgh, Pennsylvania. His research interests are primarily in mathematical models for multiscale geometrical changes in Engineering and Physics.

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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