



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 **mercoledì 11 febbraio 2015 a partire dalle ore 14.30**
si terrà presso l'aula **Q2** (via Mesiano 77) il seguente seminario

Mathematical modelling of cracks propagation in an orthotropic solid

Prof. Eduard-Marius Craciun

OVIDIUS University of Constanta, Romania

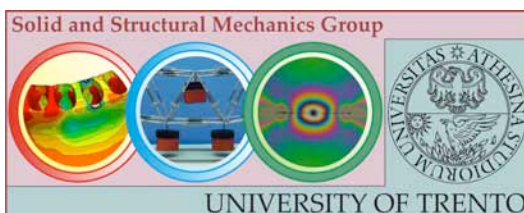
We consider a homogeneous elastic, orthotropic solid containing three equal and collinear cracks, acted by symmetrically distributed normal stresses. Following Guz's representation theorem in a weakly modified form due to Soos, and solving the Riemann-Hilbert problems we determine the expressions of the complex potentials. Using the asymptotic analysis, we obtain the asymptotic values of the stress and displacement fields.

Using the extended maximum tangential stress criterion due to Erdogan and Sih and numerical computations we study the interaction cracks problem for a graphite-epoxy fibre reinforced composite material and we get that:

if the length of the cracks is greater as the distance between them, the inner tips will start to propagate first, the cracks tend to unify; the interaction between the cracks is strong,
if the length of the cracks is much smallest as their distance, all tips start to propagate simultaneously; the interaction between the cracks is weak.

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, A. Piccolroaz, F. Dal Corso, M.F. Pantano, R. Springhetti)



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