



UNIVERSITÀ DI PISA

DIPARTIMENTO DI INGEGNERIA STRUTTURALE

Dottorato in Ingegneria delle Strutture

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AVVISO DI SEMINARIO

Nell'ambito del Dottorato in Ingegneria delle Strutture (anno 2004),

giovedì 11 marzo, alle ore 16.00,

il Prof. Gianpietro Del Piero, dell'Università di Ferrara,

terrà un seminario dal titolo:

“Un modello non locale di danneggiamento”.

Sommario. *In the proposed model, the damage at a cross section x_0 of a bar is represented by a weakened zone centered at x_0 . The weakening effect is maximal in the section, and decays according to a given law. Thus, if we consider a bar of length l , free of external loads and subject to hard device, in the presence of n weakened zones of different intensity centered at the points x_i the total energy of the bar can be explicitly derived. For an appropriate choice of the weight function ρ , the equilibrium configurations of the bar exhibit the following properties:*

- (i) An equilibrium configuration with n weakened zones located far away from the ends of the bar is energetically more convenient than a configuration with n weakened zones with the same intensities, located close to the ends of the bar.*
- (ii) An equilibrium configuration with n weakened zones located far away from each other is energetically more convenient than a configuration with n weakened zones with the same intensities, located close to each other.*
- (iii) For sufficiently large values of the total elongation, configurations with a large number of weakened zones are energetically more convenient than configurations with a small number of weakened zones. However, there is an upper bound to the number of zones, related with the rate of decay of ρ .*
- (iv) The rate of decay of ρ also determines an optimal spacing between the weakened zones. These results will be compared with the experimental data available in the literature, concerning bars made of concrete, reinforced concrete, metal, or polymer and subjected to tension or bending.*

Il seminario sarà tenuto nella sala riunioni del DIS.

Pisa, 2 marzo 2004.

Il Coordinatore del Corso di Dottorato

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