

Università degli Studi di Pavia

Dipartimento di Meccanica Strutturale

In collaborazione con

Centro di Simulazione Numerica Avanzata – CeSNA

Istituto Universitario di Studi Superiori

Duality in the Geometrically Exact Analysis of Three-Dimensional Framed Structures

In this presentation two dual energy-based variational formulations for the quasi-static linear elastic analysis of geometrically exact framed structures, modelled using the three-dimensional Reissner-Simo beam theory, will be considered. A variationally consistent hybrid-mixed finite element formulation leading to numerical solutions that strongly satisfy the equilibrium differential equations in the elements, as well as the static boundary conditions, will also be presented. As it will be shown, pairing the total potential and total complementary energies of the primal and dual sets of approximate solutions opens a new way on *a posteriori* error estimation and on possible bounding aspects within the framework of geometrically nonlinear analysis of framed structures by duality arguments.

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Lunedì 12 Ottobre, Aula MS1
Seminar tentative schedule: 15.00 - 17.00
Dipartimento di Meccanica Strutturale
Via Ferrata,1 – Pavia

Hugo Santos has a post-doc position at the Structural Mechanics Department of the University of Pavia