Seminar on Plate Analysis by the Multi Term Extended Kantorovich Method (with a short introduction to the Exact Element Method)

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The MUL^2 group in cooperation with AIDAA Torino and the FULLCOMP project is pleased to announce a seminar on plate analysis by the multi term extended Kantorovich method (with a short introduction to the exact element method).

Abstract
A semi-analytical approach to the elastic nonlinear stability analysis of rectangular plates is developed. Arbitrary boundary conditions and general out-of-plane and in-plane loads are considered. The geometrically nonlinear formulation for the elastic rectangular plate is derived using the thin plate theory with the nonlinear von Kármán strains and the multi-term extended Kantorovich method. The boundary value problem that results from the arc-length continuation scheme and consists of coupled differential, integral, and algebraic equations is re-formulated in a form that allows the use of standard numerical BVP solvers. The applicability of the proposed approach to the tracking of the nonlinear equilibrium path in the post-buckling range is demonstrated through numerical examples of rectangular plates with various boundary conditions.

Bio-Sketch
Prof. Eisenberger is a member of the faculty at the Technion since 1980. He got his BSc. from the Technion (1977), MSc (1978) and PhD (1980) from Stanford University, CA. His research is in the broad area of computational structural mechanics, including static, dynamic and stability of structural members with different materials (isotropic, layered composites, FGM, and Piezoelectric) and with variable cross-sectional properties. In the 1980's he developed the Exact Element Method for the solution of variable cross section members, and in the 2000's the MTEKM for plates. Currently his research focuses on exact solutions for plate problems using sophisticated series representations of the deflection surface.