



# EMI 2024 - University of Illinois

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MSo202 - New Challenges in Instabilities of Shell Structures

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**Abstract**

Shells structures are commonly used in different industries. They are widely investigated because of their sensitivity to instability phenomena. In automotive and aerospace engineering, lowering fuel consumption is a crucial objective. Civil engineering structures are also investigated to minimize the weight. Solutions can be thickness reduction and stiffening or considering new materials as architected ones. There is a strong resurgence of activity in buckling of shell structures. Determination of the load-bearing capacity under classical or complex mechanical loading, geometrical imperfection sensitivity, metal corrosion effect and residual stresses, thermo-mechanical coupling, effect of local or total confinement with rigid or soft material (buried pipelines, ...), stiffened configurations and multi-layered shells or plates, as well as non-common geometries, are few examples among the new challenging problems expected in this mini-symposium. Papers addressing practical applications and their analysis with numerical and/or experimental approaches are very welcome.



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