

Mechanics and Physics of Solids and Structures

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Mini-Symposium scope

The past years have seen a renewed interest in the physics community for solid mechanics. Physicists, mainly condensed matter physicists, have started to revisit problems of mechanics and materials, thought to be classical by engineers and mechanics. This renewed interest brought a research stimulus in the solid mechanics community. An example can be found in the theme of elastic structures where buckling, once thought as something to avoid, is now used to design and optimize systems: soft structures working in the post-critical regime are bringing new functionalities while still exhibiting excellent mechanical performances. Other examples can be found in biomechanics, the interplay between fluid and solids, growth and form, fracture mechanics.

The goal of this mini-symposium is to bring the solid mechanics and physics communities together for exchange of ideas, cross-fertilization, and new collaborations. We believe each community has its own tools and paradigms to bring: statistical physics on one side, and continuum mechanics on the other for example.

We believe the emerging mechanics-physics community will be gathered around common tools (applied mathematics, nonlinear dynamics, proof-of-concept experiments) to provide new insight into the behavior of deformable structures and nonlinear solid mechanics.