Stability and failure of structures and materials

Noël Challamel*[1] and Wadee Ahmer*†[2]

[1]Univ. Bretagne Sud (IRDL) – Université de Bretagne Sud – Centre de Recherche Rue de Saint Maudé BP92116, 56321 Lorient Cedex, France

[2]Department of Civil and Environmental Engineering [Imperial College London] – South Kensington Campus London SW7 2AZ, United Kingdom, United Kingdom

Abstract

This symposium supported by the ASCE EMI Stability Committee is to provide a forum to discuss recent advances and address the future prospects in the area of stability and failure mechanics of structural components, systems and materials. Interested researchers are invited to submit abstracts on topics which include, but are not limited to:

- Instability in columns, beams, plates, shells and sandwich structures.
- Instability of members made from metallic and composite materials.
- Post-buckling analysis including analytical/computational modelling and methods.
- Dynamic stability problems including energy absorption systems or crashworthiness analysis.
- Interactive buckling in thin-walled structures.
- Failure mechanics of materials including cracks, delaminations and micro-buckling.
- Buckling of micro/nano and lattice structures. Wrinkling of thin-films.
- Progressive cellular buckling and snaking.
- Non-local mechanics including instabilities in systems with non-local effects.
- Orthotropic and anisotropic materials and related stability problems.
- Instabilities in layered and granular media including shear and kink band formation.
- Experimental techniques and fixture design for structural and material stability tests.

Keywords: Stability, Buckling, Bifurcation, Structural mechanics, Thin, walled structures

*Speaker

†Corresponding author: a.wadee@imperial.ac.uk