

Buckliphobia or buckliphilia

Is structural instability always bad?

by

M. Ahmer Wadee

(Professor in Nonlinear Mechanics, Imperial College London)

Wednesday 31st October 2018
starting at 7.30 pm

Lecture Theatre B13, Physics and Astronomy Building,
University of Nottingham, University Park, Nottingham NG7 2RD
[On-Campus parking is free after 4.30pm in the Main Visitor Car Park]

Abstract

Structural engineering has a rich history with its landmark monuments and numerous personalities. As a discipline, it relies fundamentally on nonlinear mathematics, which can reveal whether structures are vulnerable to catastrophically dangerous collapse (or failures) or those that can be contained. Structural failure is inherently a nonlinear process. We will focus our attention on geometric nonlinearities, the source of which are large deflections or deformations. Buckling is most likely to occur in components or systems that are made from slender elements that are wholly in, or in-part, compression such as columns and beams. We shall see that nonlinear mathematics provides key tools to assess robustness and make informed decisions about whether potential failure modes are catastrophic or otherwise.

Ahmer Wadee is Professor of Nonlinear Mechanics in the Structures Section, Department of Civil and Environmental Engineering and leads the research group specialising in the field of Nonlinear Structural Stability. His primary research interests involve modelling buckling instabilities in metallic and composite material structures using analytical methods

No charge is made to attend meetings; non-IMA members are welcome

The talk is coordinated by the East Midlands Branch Secretary,
Dr Stephen Hibberd: stephenhibberdcotgrave@gmail.com

Web details of East Midlands events: ima.org.uk/branches/east-midlands/