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Ankündigung eines Gastvortrages

im Rahmen des Mechanik Seminars

zum Thema

Modelling elastic buckling mode interaction using different shear deformable theories for the core

Ort: **Technische Universität Berlin, Gebäude MS,
Raum MS 107, Einsteinufer 5, 10587 Berlin
Mittwoch, 15. Januar 2014, 16:15 Uhr**

Gastdozent:

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Abstract:

Sandwich structures have been on the forefront of different engineering applications across many sectors due to their optimum configuration of providing high strength and stiffness for low weight, by assigning strength where it is mostly needed. Precisely because of this optimized configuration they can be prone to nonlinear elastic instability phenomena that can localize stresses and bring upon sudden loss of their load carrying capacity. Such a localized instability is the interactive mode of overall and local (plate) buckling modes, considered stable and neutrally stable respectively from linear analysis.

This talk will describe analytical efforts in modelling elastic buckling mode interaction in sandwich struts and beam-columns using two different shear deformable theories for the core; the Timoshenko Beam Theory (TBT) and the higher order (RBT). The models are geometrically nonlinear with large displacement assumptions and are based on the Potential Energy Principle. The development of both models will be described and results will be shown, highlighting their differences and the range of application of each.