



Prof. **Daide Bigoni**,

DICAM Via Mesiano 77, 38123 Trento, Italy

will deliver a short seminar on

“The strange case of a piecewise smooth elastic structure”

in the Engineering Department “Enzo Ferrari”

via Pietro Vivarelli 10, 41125 Modena, Italy

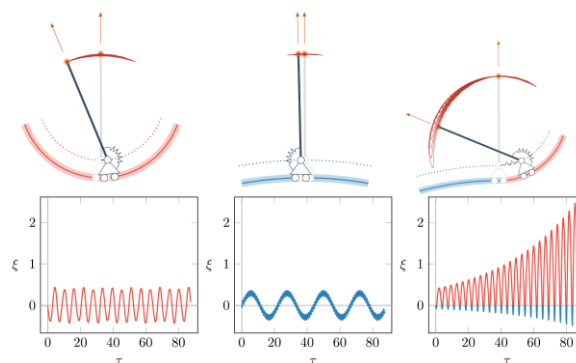
The course will be delivered in physical attendance only on:

11th of May 2023, 11:30-12, room P0.5 (building MO25)

Please contact Prof. Andrea Nobili at andrea.nobili@unimore.it for more details.

Abstract

A new type of flutter instability generated by the "fusion" of two structures which are separately stable, but become unstable when joined together. The analysis of instability involves here the treatment of a discontinuity in the curvature of a constraint [1], so that the system is piecewise smooth.



Two stable smooth subsystems with positive and negative curvature of a sliding constraint (upper part: left and centre) and the fusion of these two structures, namely, a compound non-smooth structure displaying instability (upper part: right), although the two 'components' are stable. The tensile force acting at the free end of the rods is tangentially follower and the same for all three structures, lying well below the critical load for instability in the case of the two smooth 'component systems'.

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References

[1] Rossi, M., Piccolroaz, A., Bigoni, D. (2023) Fusion of two stable elastic structures resulting in an unstable system. *Journal of the Mechanics and Physics of Solids* 173, 105201.