Strange oscillatory instabilities in elastic structures

12 maggio 2023
4:00 pm
San Ponziano Complex - Conference Room

Flutter instability caused by follower loads has become a reality after the invention of the "freely-rotating wheel device" by Bigoni and Noselli, of the "flutter machine", and of the device to generate Reut-type loads. Further research has proven that flutter instability, Hopf bifurcation, dissipation instabilities, and Ziegler paradox are all possible in conservative systems, thus disproving an erroneous belief continuing since at least 50 years. The last part of the talk addresses 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. (ERC AdG BEYOND is gratefully acknowledged)

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