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Università Iuav di Venezia

SCUOLA DI DOTTORATO
DOTTORATO IN
ARCHITETTURA, CITTÀ
E DESIGN

AMBITO DI RICERCA
INNOVAZIONE
PER IL COSTRUIRE
E PER IL PATRIMONIO
CULTURALE

FLUTTER AND DIVERGENCE INSTABILITIES

in elastic structures

seminar

Davide Bigoni Università degli Studi di Trento

Flutter and divergence instabilities and Hopf bifurcations may occur in elastic structures subject to nonconservative loads such as follower forces and forces acting on a fixed line. This was theoretically shown by Ziegler (1956), Beck (1952), Reut (1939), among many others (see the review by Elishakoff, 2005). However, the practical realization of these nonconservative forces was considered for sixty years very difficult and often declared impossible. In this talk we will show theoretically and experimentally how to obtain follower forces of the Ziegler type. Moreover, it will be shown how flutter and divergence instabilities can be obtained in structural systems loaded by conservative forces.

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