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# Mechanical vibration B

## Finalità

The course gives the basics for the theoretical and experimental vibration analysis of continuous systems

## Programma

Vibrations of continuous systems: local and global discretization (Rayleigh-Ritz, Galerkin, Lagrange Equations, FEM); vibrations of beams, plates and shells.

Introduction to large-amplitude vibrations and nonlinear phenomena.

Stability problems of systems with fluid-structure interaction: flutter and divergence of aeronautical and aerospace structures.

Applications to actual problems.

Experimental modal analysis on structures with high modal density.

## Attività d'esercitazione

Laboratory experiences: experimental modal analysis of thin panels

## Modalità d'esame

Written exam on the program that can be integrated with assignments and reports of laboratory experiences.

## Testi consigliati

M. AMABILI, 2007, Nonlinear vibrations and stability of shells and plates, Cambridge University Press, New York/Cambridge.