TEACHING SEMINAR

The natural frequency of the harmonic oscillator

MONDAY, MARCH 25TH 3:30PM-4:20PM
ARMS 1103

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Faculty Candidate - Open Search

ABSTRACT

The formula for the natural (undamped) frequency of the harmonic oscillator is introduced and explained. The learning objective is for students to be able to identify the parameters of a system (e.g., stiffness and mass) that dictate the natural frequency as opposed to other irrelevant parameters. The presentation is driven by examples and naturally leads to the concept of modes of vibration. The seminar is meant to be part of an introduction to an advanced undergraduate level course in structural dynamics; it presupposes a minimum of familiarity with dynamics and strength of materials.

BIOGRAPHY

Hussein Nassar is an Assistant Professor of Mechanical and Aerospace Engineering at the University of Missouri – Columbia (MU). He holds a double degree in Mathematics and Engineering from Sorbonne Université and École des Mines – PSL as well as a PhD in Mechanics from Université Gustave Eiffel. He joined the faculty at MU in 2018. His research investigates theoretical models of continuum mechanics applicable to architected solids and shells with emphasis on interactions between geometry and elasticity, both in static and dynamic regimes. His research has been supported by the NSF and the Army Research Office; he is a recipient of the NSF CAREER Award.

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