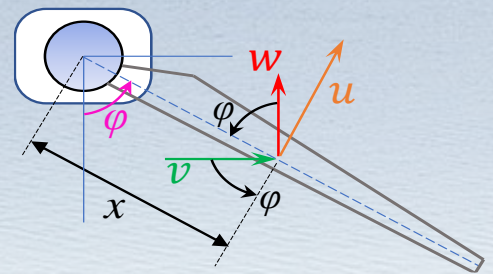


# Off-shore Wind Turbine Blade Vibrations Under Stochastic Wind Load and Turbulence Perturbations

Mercoledì 18 Dicembre 2024  
Ore 16:00 – 17:00  
Aula Giovannoni | Dipartimento ArCoD  
Relatore: **Prof. Luca Caracoglia**



L'attuale tendenza nell'industria delle turbine eoliche offshore è quella di costruire strutture di torre più grandi e a bassa massa, per rispondere alla crescente domanda di energia rinnovabile e, al contempo, alla necessità di sistemi efficienti in termini di costi e manutenzione.

La presentazione esplorerà il fenomeno del flutter aeroelastico nelle pale lunghe delle turbine eoliche offshore, che, a causa della loro flessibilità, sono sempre più sensibili a vibrazioni dinamiche indotte dal vento, soprattutto in condizioni estreme. L'autore si concentrerà sull'interazione tra i modi di flessione e torsione delle pale, analizzando come perturbazioni quali turbolenza, errori di carico e semplificazioni nei modelli influiscono sull'insorgere del fenomeno.

*Short professional bio* of Luca Caracoglia:

Luca Caracoglia is a Full Professor in the Department of Civil and Environmental Engineering of Northeastern University, Boston, Massachusetts, USA. Luca Caracoglia's research and professional interests are in structural dynamics, random vibrations, fluid-structure interaction of civil engineering structures, nonlinear cable network dynamics, wind engineering, wind energy and wind-based energy harvesting systems. He has been author or co-author of 100+ peer-reviewed journal publications and received the NSF-CAREER Award for young investigators in 2009. He was granted the title of "Fellow ASCE" in 2020 for his career accomplishments and he is currently a member of the Executive Board of the Italian National Association for Wind Engineering. He served as a member of the International Executive Board of the International Association for Wind Engineering in 2012 – 2017, and as a member of the Board of Directors of the American Association for Wind Engineering in 2020-2022. He currently serves as Associate Editor for the Journal of Fluids and Structures (Elsevier) and the ASCE Journal of Bridge Engineering.

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