

Johns Hopkins University

Center for Environmental & Applied Fluid Mechanics

3:00 PM, Friday, February 27, 2026

Gilman Hall 50

Zoom: <https://wse.zoom.us/j/93762992307>

[Link for Spring 2026 recordings](#)



Prof. Alfredo Peña

Department of Wind and Energy Systems
Danish Technical University

“Challenges and Paradoxes of Modeling and Measuring Atmospheric Flow”

Abstract: The advancement of wind power meteorology demands integrating multiscale atmospheric flow modeling and measurements. Atmospheric processes span a wide range of spatial and temporal scales, from 3D turbulence around turbines to mesoscale weather systems driving regional winds. Modeling and measuring across these scales are fundamental to predict wind conditions and optimize turbine responses, as well as ensure reliability on the power system. Measurements provide the basis to validate and further develop atmospheric models, capturing the complexities that simulations alone cannot handle. This presentation explores the symbiotic relationship between modeling and measurements, their challenges and, more curiously, their paradoxes, which wind power meteorologists try to counteract in a daily basis.

For more details, visit: <https://orbit.dtu.dk/en/persons/alfredo-peña/>

Hosted by: Prof. Julie K. Lundquist (MechE)