



POLITÉCNICA



CoMEtaS
Training activities

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MSCA Actions

May 27, 2024, ETSIAE-UPM, Aula Magna.

Training seminar:
Uncertainty reduction with data in prognostics and health management
11:00-13:00

Discussion with presenter:
The U.S. university system and graduate opportunities
13:15-13:45

Live in YouTube: <https://www.youtube.com/watch?v=9z3gU2pnFiM>



Nam-Ho Kim

Department of Mechanical and Aerospace Engineering, University of Florida



About the talk: In the era of data science, some applications have too many data, while others have too small data. In practice, however, it is difficult to estimate how many data are good enough or what the effect of the lack of data would be. In this presentation, we evaluate the contribution of data in the viewpoint of uncertainty reduction. If the source of uncertainty can be classified into aleatory and epistemic, we view data as a tool to reduce epistemic uncertainty. This unique view can tell us how many data are good enough and what we need to pay if we do not have enough data. Three related research topics will be presented: (1) prognostics under data deficiency, (2) data measurement scheduling, and (3) data-driven prognostics with low-fidelity physical information.

About the presenter: Prof. Nam-Ho Kim is presently Professor of Mechanical and Aerospace Engineering at the University of Florida. He graduated with a Ph.D. in the Department of Mechanical Engineering from the University of Iowa in 1999 and worked at the Center for Computer-Aided Design as a postdoctoral associate until 2001. His research areas are structural design optimization, design sensitivity analysis, design under uncertainty, structural health monitoring and prognostics, nonlinear structural mechanics, and verification validation and uncertainty quantification. He has published seven books and more than two hundred refereed journal and conference papers in the above areas. He is an Associate Fellow of American Institute of Aeronautics and Astronautics and senior review editor of Structural and Multidisciplinary Optimization.