Prof. Spilios Fassois, University of Patras, Greece

Professor Fassois received the Diploma Degree in Mechanical Engineering from the National Technical University of Athens, Greece, in 1982 and the M.Sc. and Ph.D. degrees from the University of Wisconsin-Madison (USA) in 1984 and 1986, respectively. He currently is Director of the Stochastic Mechanical Systems and Automation Laboratory. He has also served on the faculty of Mechanical Engineering and Applied Mechanics of the University of Michigan, Ann Arbor, MI, USA (1986-1992). His research interests are in stochastic mechanical systems and automation, including stochastic system identification, aircraft systems, and Structural Health Monitoring. He is the recipient of various awards in both Greece and the United States, and has published over 160 papers in international technical journals and conference proceedings. Professor Fassois participates in various international scientific committees, international conference committees, he has served as Associate Editor for the ASME Journal of Dynamic Systems, Measurement and Control, Guest Editor of thematic issues for the same journal and also for IEEE Control Systems Magazine, while he is a member of the Editorial Board of the Journal of Mechanical Systems and Signal Processing.

Keynote abstract:

Non-Stationary Random Vibration Parametric Modelling and Identification: methods and applications

Non-stationary random vibration signals exhibit time-dependent characteristics and require proper models and corresponding identification methods. The focus is on parametric models and identification methods, which are classified according to the type of model parameter temporal evolution postulated: unstructured, stochastic and deterministic. The relative model characteristics and the primary identification methods within each class are discussed, along with model analysis issues. Three application case studies are then briefly considered: (i) Output-only identification of the non-stationary dynamics of a laboratory bridge-like structure with moving mass, (ii) non-stationary modelling of the El Centro earthquake ground motion signal, and (iii) output-only identification of non-stationary wind turbine dynamics under normal operating conditions.