Silvio Simani's CV and Talk's Abstract

Silvio Simani was born in Ferrara in 1971. He received his Laurea degree (cum laude) in Electronic Engineering from the Department of Engineering at the University of Ferrara, Italy, in 1996, and was awarded the Ph.D. in Information Science (Automatic Control) at the Department of Engineering of the University of Ferrara and Modena, Italy, in 2000. Since February 2002 he was Assistant Professor at the Department of Engineering of the University of Ferrara, and since December 2018 he has been Professor of Automatic Control at the same Department. Since 1999 he is member of the IFAC Technical Committee 6.4 on Fault Detection, Supervision and Safety for Technical Processes (SAFEPROCESS) and he has been appointed as vice-chair of the same Technical Committee in 2018. He is member of the IEEE Society from 1999, and he became Senior Member IEEE in 2016. Prof. Simani has published more than 320 refereed journal and



conference papers, several book's chapters, and four monographs. Prof. Simani is in the list of the Stanford University World's Top 2% Scientists in his field. His research interests include fault diagnosis and fault tolerant control of linear and nonlinear dynamic processes, system modelling, identification and data analysis, linear and nonlinear filtering techniques, fuzzy logic and neural networks for modelling and control, as well as the interaction issues among identification, fault diagnosis, fault tolerant and sustainable control. These techniques have been applied to power plants, renewable energy conversion systems, aircraft and spacecraft processes.

- Talk's Title:Fault Diagnosis and Sustainable Control of Wind Turbines: Robust Data-
Driven and Model-Based Strategies
- **Talk's Abstract**: This talk discusses the development of reliable and robust fault diagnosis and fault-tolerant ('sustainable') control schemes employing data-driven and model-based approaches. These strategies can cope with unknown nonlinear systems and noisy measurements. The talk also discusses simpler solutions relying on data-driven and model-based methodologies, which are key when online implementations are considered for the proposed schemes. In fact, to improve the safety, reliability and efficiency of wind turbine systems, thus avoiding expensive unplanned maintenance, the accommodation of faults in their early occurrence is fundamental.