



UNIVERSITÀ
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Ph.D. School in Electronics, Computer Science
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Ph.D. School of Microelectronics

**IEEE Circuits and Systems Society
Distinguished Lecturers Program**

**Modeling Cascading Failure in Power
Systems from a Network Perspective**

Prof. C.K. Michael Tse

Hong Kong Polytechnic University, Hong Kong

Tuesday, October 1st, 2019, 15:00

Aula Seminari Magenta

Abstract – Recent attempts in applying complex network analysis to the study of cascading failures have gained new insights into the effects of network structure on the extent and rapidity of failure events that occur in large-scale power systems. Results generated from such studies, though being able to shed some light on the effective assessment of the robustness of power systems, are not always consistent with historical data. Our recent efforts in incorporating physical power flow processes in the model of failure propagation and our latest findings using this new model have attracted much attention from the engineering community. The consistency with historical data verified the importance of incorporating physical processes in the model and the appropriate application of complex network concepts for the study of cascading failure in physical systems. This talk describes the recent progress in the study of cascading failures in physical systems.

Biography – C. K. Michael Tse obtained the BEng(Hons) and PhD degrees from the University of Melbourne, Australia. He is a Chair Professor of Electronic Engineering with Hong Kong Polytechnic University where he served as Head of Electronic and Information Engineering from 2005 to 2012. His research interests include power electronics, nonlinear systems, and network applications. In 2005 he was elected IEEE Fellow, and in 2009 he was appointed Chang Jiang Scholars Chair Professor. Prof. Tse received numerous research and invention prizes including IEEE Transactions Best Paper Prizes, Gold Medals at Geneva International Invention Exhibitions and Grand Prize at Silicon Valley International Inventors Festival. He was conferred honorary professorships by a few Australian and Chinese universities and was awarded distinguished fellowships by a few Australian and Canadian universities, including the Professor-at-Large Fellow by University of Western Australia and Distinguished International Research Fellow by the University of Calgary. He was appointed IEEE Distinguished Lecturer three times. He serves/has served as Editor-in-Chief for IEEE Transactions on Circuits and Systems II, IEEE Circuits and Systems Magazine, as Editor for a few other journals, and as member of a few IEEE institute-level committees including Fellows Selection Committee. In Hong Kong, he serves/has served on panels of Hong Kong Innovation Technology Fund, Research Grant Council and ITC-ESS and on Quality Education Fund Committee of HKSAR Government, and is a board member of the Hong Kong Sinfonietta.

Organizer

Prof. Edoardo Bonizzoni

Ph.D. Coordinators

Proff. P. Malcovati, P. Di Barba

The seminar will be held in English. For more information: edoardo.bonizzoni@unipv.it