



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

Automatic Voltage Control: Challenges and Experiences
by
Prof. GUO Qinglai, Tsinghua University

Date : 19th March, 2021 (Friday)

Time : 1:30pm – 3:00pm

Zoom : <https://cuhk.zoom.com.cn/j/97534213277?pwd=STU3MXh2b1djVUt2NUowbDBNNGtpUT09>

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Abstract

Automatic voltage control (AVC) is essential to meet stricter requirements for security and economical power system operation. As a large-scale nonlinear problem, it is a great challenge to implement an AVC system and make it online and close-loop. Several topics will be covered in this presentation based on our field experiences in China and US, that includes: 1) an adaptive zone division based AVC architecture in China; 2) the implementation of voltage control system in PJM; 3) the coordination between TSO and DSOs; 4) the AVC system to support large-scale wind power integration. Experiences and results from field site will be shared in detail.

Biography

Prof. Qinglai Guo (B.Sc. '00, Ph.D. '05, both from Tsinghua University, Beijing, China) is currently a professor with the Department of Electrical Engineering, Tsinghua University. In 2015, he was awarded the National Science Fund for Excellent Young Scholars. In 2016, he was awarded the Mao Yisheng Beijing Youth Technology Award. In 2017, he was awarded the Yangtze River Young Scholar. In 2018, he was awarded the Beijing Science Fund for Distinguished Young Scholars. In 2020, he was awarded the Special Prize of China Science & Technology Award for Young Scholars (only 10 winners every two years in China). His research interests include Energy Management System, Voltage Stability and Control, and Cyber-Physical System.

He is now an IET Fellow, IEEE senior member and a CIGRE member, and is involved in 5 workgroups of these two organizations. Now he is TCPC of Energy Internet Coordinating Committee of IEEE PES, the co-chair of IEEE PES Work Group on “Energy Internet”, IEEE PES Task Force on “Cyber-Physical Interdependence for Power System Operation and Control”, and IEEE PES Task Force on “Voltage Control for Smart Grid”. He is an editorial member of “IEEE Transactions on Power Systems”, “Renewable & Sustainable Energy Reviews”, “IEEE Transactions on Smart Grid”, and other 5 international journals.

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