



Power Systems Engineering Research Center

Tie-line Scheduling in Electric Power Systems Under Certainty

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2:00-3:00 p.m. Eastern Time (11:00-12:00 p.m. Pacific)

Description: Different system operators (SOs) control the grid assets over the power network within their own geographical footprints (areas). Multiple SOs coordinate to schedule the power flows over the tie-lines interconnecting such areas. In this talk, I will first present an algorithm that seeks a robust tie-line schedule, i.e., one that minimizes the maximum aggregate dispatch costs of balancing demand and supply in real-time across multiple areas. The algorithm requires limited communication between the SOs and computes an optimal schedule within finitely many iterations. I will end with a discussion on the market mechanism that many pairs of SOs utilize to determine their tie-line schedule – coordinated transaction scheduling (CTS). Joint work with Ye Guo, Mariola Ndrino, and Lang Tong.

Biography: Subhonmesh Bose is an Assistant Professor in the Dept. of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. Prior to joining UIUC, he was an Atkinson Postdoctoral Fellow in Sustainability at Cornell University. He received his MS and PhD at California Institute of Technology in Electrical Engineering in 2012 and 2014, respectively. And, he got his B.Tech degree at Indian Institute of Technology Kanpur in 2009. He was a co-recipient of a best paper award in system operations and market economics in the IEEE Power and Energy Society General Meeting, 2013.