

Cyber-physical systems for energy management in the Smart Grid: 3 examples

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Abstract

One of the aspects of the emerging Smart Grid is the ability to incorporate and utilize cyber-physical systems (CPS) in demand side management (DSM) or demand response schema for efficient energy management. In this talk, we will present three studies of CPS applications to energy management in the Smart Grid including a) an artificial neural network for managing the electric energy consumption of a university campus; b) a decision-making algorithm for efficient energy management in a *smart* home; and c) a multi-agent system based energy management in a commercial building. Results from detailed modeling and simulation efforts will be presented for all the studies.

Bio of speaker:

Sid Suryanarayanan is an Assistant Professor in the faculty of Electrical and Computer Engineering at Colorado State University, where also serves as the site director of the Center for Research and Education in Wind (CREW) and as a resident faculty fellow in the School of Global Environmental Sustainability (SoGES). He is also a junior adjunct researcher with the Power Systems Engineering Research Center (PSERC). He holds the PhD in electrical engineering from Arizona State University (ASU). For more information, visit: <http://www.engr.colostate.edu/~ssuryana>.