

Energy Colloquium

Control and Optimization of Networked Distributed Energy Resources

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Technopark, Building 3, Room 407



ABSTRACT:

The penetration of both distributed energy resources (DERs), such as photovoltaic panels, electric vehicles, and smart buildings and appliances, as well as Internet-connected sensors, computing devices and actuators is accelerating worldwide. The confluence of these two trends points to a future where there are billions of DERs, as well as information and control technologies throughout our electricity infrastructure, from generation to transmission and distribution to end use. Unlike most endpoints today, which are merely passive loads, these DERs are active endpoints that not only consume, but can also generate, sense, compute, communicate, and actuate. They will create both a severe risk and a tremendous opportunity: a large network of DERs introducing rapid, large, frequent, and random fluctuations in power supply and demand, voltage and frequency, and our increased capability to coordinate and optimize their operation in real time. In this talk, I will describe some of these emerging challenges and research to overcome them.

Non-Skoltech attendees should request access to the building in advance by sending their passport details to energy.colloquium@skoltech.ru

Colloquium schedule and information on how to get to the colloquium can be found at <http://www.skoltech.ru/research/en/events/energy-colloquium/>