PSERC Power Systems Engineering Research Center

PSERC WEBINAR

Modeling and Optimizing Flexibility Across Coupled Infrastructure Systems

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As the electric power grid evolves, new sources of flexibility are needed to reliably balance supply and demand. This talk explores how optimization and control can enable infrastructure systems to actively support the grid while continuing to perform their primary functions. The first part focuses on water infrastructure, examining how operational flexibility and coordination of on-site resources can reduce electricity costs, improve resilience, and provide grid services. The second part focuses on agrivoltaic systems, where crops are grown beneath solar photovoltaic panels. I will discuss optimization-based control strategies for solar tracking that balance electricity generation with crop light requirements while accommodating grid constraints and flexible interconnection agreements. Together, these applications demonstrate how coordinated infrastructure operations can provide new sources of flexibility and support a more reliable and resilient electric grid.

OCTOBER 28, 2026 | **1:00-2:00 P.M. ET**

LINK TO WEBINAR

(10:00-11:00 A.M. PT)

Anna Stuhlmacher is an Assistant Professor in the Electrical and Computer Engineering Department at Michigan Technological University. Prior to joining Michigan Tech, she received her B.S. degree in electrical engineering from Boston University in 2017, and her M.S. and Ph.D. degrees in electrical engineering from the University of Michigan in 2019 and 2023, respectively. Her research focuses on the optimization of uncertain distributed energy resources. She is particularly interested in the interconnection and coupling of the power grid with other critical infrastructure systems, such as drinking water and agricultural systems.