

## Development of Robust and Modular Tactical Microgrids

12 October 2018 – ME Auditorium – 1300

### With Guest Lecturer Mr. Ryan Wiechens

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Mr. Ryan Wiechens

#### Abstract

Tactical microgrids have the potential to deliver reliable and efficient power to support critical missions operating in the most austere locations. However, the small scale of tactical systems produce difficult dynamics, which make tactical microgrid design difficult. Current systems require either, expert users to commission every microgrid at installation, or rely on proprietary single-vendor equipment. These approaches demand either an extensively trained user, or a closed ecosystem expensive to modify and expand. Thus, a major technical gap inhibiting tactical microgrid deployment is the lack of an open, modular, and scalable solution.

This talk will present Lincoln Laboratory's efforts to develop robust control algorithms, system modeling and test techniques, and open standards to enable broader adoption of tactical microgrids.

#### Biography

Mr. Wiechens joined the Laboratory in 2003, and has been working in the Tactical Microgrid space for the last five years. He has been with the Laboratory's Energy Systems Group since its inception, where he has led efforts to develop open and flexible control technology for small tactical microgrids and hybrid energy systems. Prior to joining the Energy Systems Group, Mr. Wiechens was a member of the Laboratory's Control Systems Engineering group, working on problems in pointing, acquisition and tracking, as well as guidance and attitude control. Mr. Wiechens graduated Cum Laude from Northwestern University with a B.S. degree in Mechanical Engineering in 2001. He received an M.S. in Mechanical Engineering from Stanford University in 2003.

