



PSERC WEBINAR

Beyond Low-Inertia Systems: Grid-Forming Converter Control for Converter-Dominated Power Systems

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At the heart of the transition to a 100% renewable zero-carbon power system is a technological paradigm shift from centralized bulk generation connected to the grid via synchronous machines to distributed renewable generation connected to the grid via power electronics. While the resulting loss of rotational machine inertia has received significant attention in the literature, it is just one of many challenges centered around the dynamics and stability of low-inertia and converter-dominated power systems. The first part of this talk discusses recent advances in the design and analysis of grid-forming converter control that leverage the fast and flexible actuation capabilities of power converters to compensate for the loss of synchronous machine inertia and turbine/governor systems. The second part focuses on adverse interactions between grid-forming control, converter and power source constraints, and machines, and discusses current work to partially overcome these challenges.

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[LINK TO WEBINAR](#)

2:00-3:00 P.M. EST

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Dominic Groß is an Assistant Professor with the Department of Electrical and Computer Engineering at the University of Wisconsin-Madison, Madison, WI, USA. From 2016 to 2019 he was a postdoctoral researcher at the Automatic Control Laboratory of ETH Zürich, Switzerland and he was with Volkswagen Group's Research Division in Wolfsburg, Germany from 2014 to 2015. He received a Diploma degree in Mechatronics from the University of Kassel, Germany, in 2010, and a Ph.D. degree in Electrical Engineering from the same university in 2014. His research interests include distributed control and optimization of networked systems, dynamics of low-inertia and converter-dominated power systems, and grid-forming control of power converters interfacing heterogeneous renewable generation.

