



## Power Systems Engineering Research Center

# Integration of Geomagnetic Disturbances (GMDs) Modeling into the Power Flow

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PSERC Public Webinar  
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2:00-3:00 p.m. Eastern Time (11:00-12:00 p.m. Pacific)

### Description

Geomagnetic disturbances (GMDs) have the potential to severely disrupt operations of the electric grid by causing high geomagnetically induced dc currents (GICs) that can lead to transformer saturation resulting in large reactive power losses. Yet to-date power engineers have had few, if any, tools to help them assess the impact of GMDs on their systems. This presentation will explain how the impacts of GMDs can be integrated into power flow analysis software. Using such an integrated approach, power engineers can study the impact of GMDs on their systems, allowing for the study of mitigation strategies. Example strategies considered include the installation of GIC blocking devices and the impact of operational changes to reduce GICs. Example results are presented for a large-scale utility system.

This webinar is based on one of the tasks “The Future Grid to Enable Sustainable Energy Systems: An Initiative of the Power Systems Engineering Research Center” funded by the U.S. Department of Energy. More information about the Future Grid Initiative is available on the [PSERC website](#).

**Biography:** Thomas J. Overbye is the Fox Family Professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign (UIUC). He is also the original developer of PowerWorld Simulator, an innovative computer program for power system analysis and visualization and a co-founder of PowerWorld Corporation. Overbye received his BS, MS, and Ph.D. degrees in Electrical Engineering from the University of Wisconsin-Madison in 1983, 1988 and 1991 respectively. Prior to joining UIUC he worked as a power system operations engineer for Madison Gas and Electric. His current research interests include electric power system analysis, visualization, restructuring and power system resiliency.

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**Registration for Webinar Participation:** None required. There is no charge for participating!

**Participation by Webinar:** We will be using the Adobe Connect 8 webinar platform. You will be able to watch the presentation slides on your computer from the designated site

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