



Sociedade Brasileira de
AUTOMÁTICA

III Webinar 2021

30 de setembro de 2021 às 17h.

Microgrid Operation and Control:

***Tools and Strategies to Overcome Operation and
Control Challenges***

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Abstract: A microgrid is a complex entity consists of distributed energy resources and loads. Therefore, a microgrid can be considered as a single generation source from the grid point of view, and it can be operated either in autonomous or grid connected modes. This webinar will cover microgrid capability charts and strategies to mitigate oscillatory stability issues in microgrids.

Microgrids can participate in the energy market to achieve technical, economic and environmental benefits. In order to facilitate the participation in energy markets, microgrid operators need to be aware of the full capability of the microgrid, hence require dynamic capability charts to assist with their decisions. Such capability charts could be produced by considering the capability of distributed energy resources in the microgrids, loads and network constraints. This webinar will discuss how these capability charts could be produced for microgrids to make informed decisions to participate in the electricity markets.

The non-linear loads connected to microgrids may pose stability and control challenges. In particular, they may result in sustained oscillations following disturbances in microgrids. Various control strategies could be implemented in power-electronic converter interfaced sources to mitigate these oscillatory stability issues. This webinar will also present a range of control techniques which could be applied to mitigate these oscillatory stability issues in microgrids.

Apoio: *CT de Sistemas de Potência da SBA*

Biografia do palestrante:

Prof. Lasantha Meegahapola is currently an Associate Professor with the Electrical and Biomedical Engineering, School of Engineering, RMIT University, Australia. He received the PhD degree from the Queen's University Belfast, UK in 2010. A/Prof. Meegahapola was a visiting researcher/ post-doctoral researcher at the Electricity Research Centre (ERC), University College Dublin, Ireland (2009-2010). From 2011 to 2014 he was with the University of Wollongong (UOW) and continue as an Honorary Fellow. He has conducted extensive research studies in microgrid stability & control, and power system stability with renewable power generation during the past fifteen years, and has published more than 120 journal and conference articles. He is a Senior Member of IEEE (SMIEEE) and a Member of the IEEE Power Engineering Society (PES) and the IEEE Industry Applications Society (IAS). Also, he is an active member of the IEEE PES power system dynamic performance (PSDP) committee task forces (microgrid dynamics, stability, and modelling) and working groups. A/Prof. Meegahapola is also serving as an Associate Editor of the IEEE Transactions on Industry Applications, IEEE ACCESS and IET Renewable Power Generation journals

