



# ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

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## Special Session on Model-Based Control Techniques for Three-Phase Systems.

Organized and co-chaired by:

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### Call for Papers

#### Technical Outline of the Session and Topics:

This session aims to introduce different model-based control techniques for modern power systems, particularly in power converters and microgrids. In recent years, the energy landscape has undergone significant transformations, characterized by the increasing penetration of distributed energy resources and the transition towards more sustainable power generation methods. However, this transition presents unique operational complexities, including intermittency, voltage fluctuations, and power quality issues. In this context, the effective management and control of converters and microgrids are paramount to ensure grid stability, reliability, and efficiency. Different model-based control techniques stand out as a promising approach to tackle these challenges by using advanced mathematical models to anticipate system behavior, and optimize control actions in real-time. Also, the introduction of Kalman filtering or other state observers to predict the system dynamics, optimal control techniques, and sliding mode control based on the model of the system are different topics to be presented in this special session.

#### Topics of the Session include, but are not limited to:

- Model predictive control for three-phase systems.
- Model-based control applied to different control techniques.
- Kalman filtering in model-based controllers.
- Active damping techniques using the model of the system.
- Design of control systems using state observers.
- Application of model-based control for in microgrids systems.
- Optimal control for three-phase systems.

#### Author's schedule:

Deadline for submission of special session papers	April 15, 2024
Notification of acceptance	June 10, 2024
Deadline for submission of final manuscript	July 01, 2024
Early submission is highly encouraged for early decision notifications!	

All the instructions for paper submission are included in the conference website:

[www.iecon-2024.org](http://www.iecon-2024.org)



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