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Abstract

Title: Trends in Control of Renewable Energy Systems

Control of renewable energy systems (RES) plays an important role on their stability, resilience, penetration in the grid and compliance with standards and regulations. On one hand, new topologies of power electronics and power systems are being developed to improve the RES performance in terms of efficiency and reliability. On the other hand, new energy storage systems are being integrated into the RES to overcome the intermittent nature of the main RES. These developments cannot be effectively employed without adapted control algorithms.

In this keynote, after a quick overview of some RES topologies and some power converters for RES, the speaker focuses on recent advances on control techniques for power control, energy management and active stabilization in RES. Different techniques will be studied and compared. Design examples will be presented for some use cases. Finally, future challenges in the control of RES will be discussed.