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This article proposes a novel method to improve the system stability through decoupling the PLL and grid impedance. Initially, the coupling relationship between PLL and ...

This paper delves into a damping control approach for a photovoltaic (PV) system connected to a weak grid by modifying the inverter control configuration through virtual ...

Abstract: As a common interface circuit for renewable energy integrated into the power grid, the inverter is prone to work under a three-phase unbalanced weak grid. In this paper, the...

Synchronization of grid-forming inverters is achieved by generating phase angles through power control, thereby mitigating the negative effects of phase-locked loops on grid ...

Under an ultra-weak grid, the phase angle margin of the inverter decreases drastically, and an easy-to-implement strategy is proposed in this paper. In addition, in the ...

This review provides a comprehensive overview of the research efforts focused on investigating the stability of PV grid-connected inverters that operate under weak grid conditions.

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Simulation results demonstrate that this multi-functional strategy outperforms traditional grid-connected inverter control schemes, effectively mitigating issues related to low ...

The paper concludes the widely-used control strategy of LCL grid-connected inverter, including adjusting inverter parameters, introducing a filter, voltage source admittance control strategy, ...

The integration of photovoltaic (PV) systems into weak-grid environments presents unique challenges to the stability of grid-connected inverters. This review pr.

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