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Damping characteristics of wind power generation system

Overview

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This paper investigates the impact of doubly-fed induction generator (DFIG) wind farms on system stability in multi-generator power systems with low-frequency oscillations (LFOs). To this end, this paper establishes the interconnection model of the equivalent generators and derives the system state.

The wind turbines (WTs) power system is connected to the grid via the power electronic converter, causing the system inertia level to drop. In this paper, the direct-drive WT system is considered as the research object, and the whole-system frequency response model is established. The inertia and.

Abstract: This paper explores the critical issue of vibrations in wind turbines, highlighting their sources, impacts, and the advancements in damping mechanisms designed to mitigate these challenges. Vibrations, stemming from aerodynamic loads, mechanical imbalances, and resonance phenomena, impose.

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