Wind turbine generator torsional vibration

This paper focuses on the stochastic characteristics of a wind turbine gear system subject to the inherent randomness of physical parameters such as Young"s modulus, the mesh stiffness and ...

To fill this gap, this article conducts a comprehensive study on the torsional stability for virtual-synchronous-controlled (VSynC) DFIG-based WTs. A reduced-order small-signal model considering ...

Torsional Vibration Analysis During Fault Ride - Through: This study investigates the torsional vibration characteristics of the drivetrain in doubly-fed induction generator (DFIG)-based ...

This work studies the torsional vibration characteristics analysis of the wind turbine drivetrain with the variation of internal parameter and external excitation.

When the grid fault occurs, wind turbines are required to possess fault ride-through (FRT) capability and rapidly restore active power after fault clearance. However, this process often leads to sharp ...

In this article, we will explore the dynamics of torsional vibration, discuss various mitigation techniques, and outline best practices for maintenance and monitoring to ensure optimal ...

To effectively enhance the voltage and frequency supporting capabilities for power grid, the doubly fed induction generator based wind turbine (DFIG WT) can be connected to the grid via grid-forming ...

This paper aims to examine the sources of vibration in wind turbines, their effects on turbine performance and durability, and recent advancements in damping mechanisms designed to mitigate ...

Insufficient drivetrain damping can cause torsional vibrations of doubly-fed induction generator (DFIG)-based wind turbine generators (WTGs), affecting their stability and safety. ...

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