

Title: High frequency wind power base station

Generated on: 2026-08-21 06:18:44

Copyright (C) 2026 G-TECH POWER. All rights reserved.

For the latest updates and more information, visit our website: <https://www.g-techholding.co.za>

-----

Does a wind farm-side MMC station have a high-frequency oscillation mechanism?

This paper investigates the high-frequency oscillation mechanism of wind farm-side MMC station during no-load charging process. First, the harmonic state space (HSS) model of a wind farm-side MMC station is established. In addition to the leakage inductance, the stray capacitance is considered in the converter transformer model.

Does stray capacitance affect high-frequency oscillation of wind farm-side MMC station?

Apart from the time delay of MMC, the stray capacitance of converter transformer makes a significant contribution to the high-frequency oscillation. This paper investigates the high-frequency oscillation mechanism of wind farm-side MMC station during no-load charging process.

What is 2 kHz high-frequency oscillation in wind farm-side MMC-HVDC project?

A new 2 kHz high-frequency oscillation has occurred in the wind farm-side MMC station of Rudong wind farm integrated MMC-HVDC project of China during no-load charging process. The mechanism of this high-frequency oscillation is different to previous ones.

Why is high-frequency oscillation threatening the stability of MMC-HVDC system?

High-frequency oscillation is one of the critical issues threatening the stability of modular multilevel converter (MMC) based high-voltage direct current (HVDC) system. A new 2 kHz high-frequency oscillation has occurred in the wind farm-side MMC station of Rudong wind farm integrated MMC-HVDC project of China during no-load charging process.

Why do wind farm-side MMC stations oscillate during no-load charging process?

The harmonic interactions of MMC and converter transformer lead to the high-frequency oscillation of wind farm-side MMC station during no-load charging process. 2. Different from PQ and DC voltage controlled MMCs, the outer control loop, i.e., AC voltage control, has great influence on the high-frequency characteristics of the wind farm-side MMC.

Does AC voltage control affect high-frequency oscillation in wind farm-side MMCs?

2. Different from PQ and DC voltage controlled MMCs, the outer control loop, i.e., AC voltage control, has great influence on the high-frequency characteristics of the wind farm-side MMC. In this case, the dynamics of AC voltage control cannot be ignored in the high-frequency oscillation analysis.

A simple method is proposed for reducing antenna aperture. Based on the method, a broadband compact

Open Data - IEA Wind TCPTask 43 Curated Open Datasets

Driven by carbon peaking and neutrality goals, the wind power industry has grown rapidly worldwide. However, power electronic devices in wind power generation systems and ...

In this paper, the high frequency oscillation problem of offshore wind power transmission through MMC HVDC system is studied. The main conclusions are as follows. Considering the internal ...

Use of high-altitude platform stations as International Mobile Telecommunications base stations in the frequency band 694-960 MHz, or portions thereof1 The World ...

High-frequency oscillation (HFO) of grid-connected wind power generation systems (WPGS) is one of the most critical issues in recent years that threaten the saf

Renewable energy transmission by high-voltage direct current (HVDC) has attracted increasing attention for the development and utilization of large-scale renewable ...

An accurate and reliable wind power prediction model has important significance for the operation of power systems and large-scale grid connection. Th...

Base learners In this paper, the selected base learners for ensemble learning in wind power prediction are LSTM, BiLSTM, GRU, BiGRU, and LSTM-Attention. LSTM is a ...

Recent advances in wide band gap research give confidence that devices based on GaN technology can outperform incumbent Si LDMOS ...

Macro Sites: Pushing the limits of wind loading As the appetite for data continues to grow, wireless providers need to deploy more and more base station antennas to keep pace ...

Considering the negative resistance effect of power electronic equipment, unstable resonance problems may occur between wind farms and converter stations. This paper focuses on the ...

Article Open access Published: 26 April 2024 Frequency regulation in a hybrid renewable power grid: an effective strategy utilizing load frequency control and redox flow ...

This paper proposes a hybrid deep learning model, CEEMDAN-SE-TR-BiGRU-Attention, for high and low frequency wind power prediction by combining complete ensemble ...

In the ever-evolving world of technology, ultra-high frequency (UHF) base station antennas have emerged as a game-changer in the realm of communication. This comprehensive guide delves ...

