Tracking photovoltaic support wind engineering

By understanding how wind pressure distributes, how different components respond, and where the vulnerabilities lie (like those purlins and panel edges), engineers can design more robust, reliable, ...

Abstract: The paper presents the results of the development of the energy efficient photovoltaic solar tracking system considering the wind load.

Field measurements of the wind-induced response for a dual-axis solar tracking system installed on the roof of the Mann Parking building of the University of Ottawa, were recorded for different azimuth, ...

To investigate the wind-induced vibration characteristics of photovoltaic array tracking supports, this study uses the harmonic superposition method to simulate pulsating wind time series and, combined ...

This study develops an efficient fluid-structure interaction (FSI) analysis framework to investigate the wind-induced vibration response of flexible photovoltaic support structures.

Considering the effects of fluid forces and vortex interactions on the vibration behavior of photovoltaic support components, this study investigates the wind-induced response characteristics of ...

The wind-induced vibration caused by wind loads is one of the main reasons for the failure of PV supports, so the research focus is not only to ...

As a result, understanding the impact of wind on PV systems, particularly when mounted on compliant solar-tracking hardware, and identifying robust, stable array layouts and stow strategies is becoming ...