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What is a compact wind acceleration turbine (CWAT)?
Compact Wind Acceleration Turbines ( CWATs) are a class of wind turbine that uses structures to accelerate wind before it enters the wind-generating element. The concept of these structures has been around for decades but has not gained wide acceptance in the marketplace.

Does wind turbine control strategy affect nacelle acceleration?
Nacelle acceleration is dominated by the higher frequency content with a minimal response in the wind-induced frequency region. As a result,it is interesting to note from Fig. 19(a) that the wind turbine control strategy,either baseline controller or optimized ROSCO,does not significantly affectthe wind turbine nacelle acceleration.

Does wind speed affect the economics of a wind turbine?
It is generally thought that since the amount of power produced by a wind turbine is proportional to the cube of the wind speed, any acceleration benefit is potentially statistically significant in the economics of wind.

How was the wind turbine control system optimized?
Parameters of the wind turbine control system were optimized using the WEIS control optimization processrepresenting the floating platform and three WECs as a single rigid body.

It is important to be able to obtain accurate measurements of the acceleration of a wind turbine, in particular of the top of the wind turbine tower or of the wind turbine nacelle. This...

However, the prevalent wind power generation technologies have different problems, such as small output and low conversion efficiency. Hence, in this study, we ...

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Further, in contrast to wind speed statistics, acceleration literally represents the forcing of the flow on turbine structures; as ...

This paper proposes a temporal-spatial acceleration framework to address the computational challenges in full-year operational simulations of power systems with high ...

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The integrated control optimization of the wind turbine and WECs not only reduces platform pitch motion, tower-base fore-aft bending moment and nacelle acceleration in the fore ...

This study aims to comprehensively investigate the influence of tower-top acceleration feedback control on the operational characteristics and structural responses of ...

Low-pass filtering enables calculation of ac-celeration statistics per characteristic turbine response time; this circumvents the classic problem of small-scale noise dominating observed ...

OverviewPerformanceHistoryEconomicsOptiwindOgin (formerly FloDesign Wind Turbine)The science of wind acceleration around a structure, as well as the vortex shedding benefits of a shroud/diffuser, are well understood and tested. From Bernoulli forward, science has substantially vetted these concepts and there is general academic consensus as to their veracity and their potential impact on wind power production. DAWT"s however have the classic boundary layer separation problem experienced by airfoils at a "stall" angle of attack. This significantly reduces t...

Further, in contrast to wind speed statistics, acceleration literally represents the forcing of the flow on turbine structures; as described later below, it does not require ...

In this matter, utilizing the different FACTS devices in the power network not only improves the system voltage profile, transient stability, loss reduction, and so forth but also ...

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