The sound of wind turbine blades

This study proposes a physics-informed neural network framework for damage detection in wind turbine blades in operational wind farms, leveraging active acoustic excitation and a helical ...

While the aerodynamic sounds associated with turbine blades are complex, two types of sound--"swooshing" and "low frequency"-- are the most commonly discussed. The swooshing effect ...

Operating wind turbines can create several types of sounds, including a mechanical hum produced by the generator and a "whooshing" noise produced by the blades moving through the air.

This paper firstly introduces the existing wind turbine blade detection methods and reviews the research progress and trends of monitoring of wind turbine composite blades based on acoustic signals.

Wind turbine blades produce airborne pressure waves (correctly called sound but which, when unwanted, is called noise) and ground-borne surface motion (vibration).

Discover the real sounds of wind turbines. Uncover the truth behind the noise and learn what to expect from these renewable energy giants.

This study explores the use of noise emitted during wind turbine operation for the assessment of blade structural integrity.

Wind turbines most commonly produce some broadband noise as their revolving rotor blades encounter turbulence in the passing air. Broadband noise is usually described as a "swishing" or "whooshing" ...

Wind turbine noise is generated aerodynamically by the rotor blades passing through the air as well as mechanically by various components such as nacelle fans and generators.

Wind turbines generate noise of two types: mechanical and aerodynamic. The mechanical noise is tonal and produced by the moving components within the nacelle. These components include the gearbox, ...

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