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Acoustic Emission Monitoring of Small Wind Turbine Blades

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Abstract

Wind turbine blade certification tests often generate sudden audible cracking sounds from somewhere within the blade, without the operators being able to locate the noise source or to evaluate the existence or the extent of any damage. It would be beneficial to be able to detect any damage incurred by the blade, whether it is accompanied by audible noise or not. The current project, named AEGIS, is looking at the possibility of using acoustic emission monitoring during testing of fiber composite blades to detect the source of damage events and assess the blade condition. The test methodology is discussed in the context of the blade certification procedure and results are presented from a series of static and fatigue blade tests to failure in the laboratory.

Full Paper at:

<http://ojps.aip.org/documentstore/index.jsp>

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