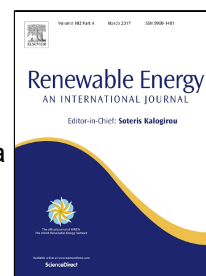


Accepted Manuscript

Modelling the structural loading of a small wind turbine at a highly turbulent site via modifications to the Kaimal turbulence spectra

Amir Bashirzadeh Tabrizi, Jonathan Whale, Thomas Lyons, Tania Urmee, Joachim Peinke



PII: S0960-1481(16)31134-X
DOI: 10.1016/j.renene.2016.12.074
Reference: RENE 8411
To appear in: *Renewable Energy*
Received Date: 17 May 2016
Revised Date: 11 November 2016
Accepted Date: 26 December 2016

Please cite this article as: Amir Bashirzadeh Tabrizi, Jonathan Whale, Thomas Lyons, Tania Urmee, Joachim Peinke, Modelling the structural loading of a small wind turbine at a highly turbulent site via modifications to the Kaimal turbulence spectra, *Renewable Energy* (2016), doi: 10.1016/j.renene.2016.12.074

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Highlights

- We compared turbine blade load statistics for inflow turbulence fields based on standard Kaimal spectra and measured turbulence spectra from a built environment site.
- For extreme, high turbulent intensity winds, the measured spectra predict isolated loading events around twice the magnitude of loads predicted by use of the standard spectra.
- The work suggests the need for improvements to the standard in order to model the non-Gaussian wind statistics that occur in extreme events such as sudden strong gusts.

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