Load validation of aero-elastic simulations with measurements performed on a 850kW horizontal-axis wind turbine - DTU Orbit (22/05/2019)

In this work, aero-elastic solver predictions with HAWC2 are compared with measured data from a VESTAS V52 wind turbine situated at DTU campus Risø. Nearly one year of several measured wind conditions were considered for selection of loads and performance simulations. A new methodology for adjusting strain gauge (SG) calibrations originally from blade pull testing over time is presented. As a result, we show and discuss the different predictions on power performance and compare results with measured blade loads, under the condition of adjusting blade SG pull test calibration for temperature and time degradation effects.

General information
Publication status: Published
Organisations: Department of Wind Energy, Wind turbine loads & control, University of Padova
Contributors: Paulsen, U. S., Gomiero, M., Larsen, T. J., Benini, E.
Number of pages: 10
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Journal of Physics: Conference Series
Volume: 1037
Issue number: 6
Article number: 062023
ISSN (Print): 1742-6596
Ratings:
BFI (2018): BFI-level 1
Original language: English
Electronic versions:
Paulsen_2018_J._Phys._3A_Conf._Ser._1037_062023.pdf
DOIs: 10.1088/1742-6596/1037/6/062023

Bibliographical note
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Source: FindIt
Source-ID: 2435910043
Research output: Contribution to journal › Conference article – Annual report year: 2018 › Research › peer-review