

DESIGN AND ANALYSIS OF EQUIPMENT FOR LOAD INTRODUCTION DURING FULL SCALE BLADE TEST

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ABSTRACT

Full scale blade testing is an important part of the validation process in the design of a wind turbine blade. As demands for more efficient turbine blades is ever increasing, testing methods need to be improved and understood better. The tests need to be as realistic as possible, so that the margin of safety can be minimised.

Currently, the static tests are performed by applying loads at different points along the length of the blade (Figure 1). The loads are introduced by clamping the blade with steel yokes and wooden inserts that follow the profile of the blade. This generates some undesirable local effects around the points of the load introduction, such as stiffening of the blade in the span-wise direction and stress concentrations. The goal of this project is to study the local effects of the load introduction and to devise a method that minimizes such effects. This project is done in collaboration Siemens Gamesa Renewable Energy.



Figure 1: Setup for a Static Test [1].

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REFERENCES

- [1] SGRE, [Siemens Gamesa leads drive for maximum blade testing efficiency](#), August 2020.