

Challenges in Detecting Wind Turbine Power Loss: The Effects of Blade Erosion, Turbulence and Time Averaging

Referee report to Manuscript Version 4

- **Line 208:** It seems that a new typo appears ‘as it an atmospheric...’
- **General comment 1:** For some figures (example Figure 5 & Figure 8) the blade condition is named as P40 roughness, and for some others (example Figure 11 & Figure 12) the blade condition is named as P40. In some parts of the text (line 220) the blade condition is named as erosion and in some other (example line 299) the blade condition is named as roughness ‘the power reduction due to roughness’. This double way of calling the degradation status of the blades could confuse the reader. It is suggested to harmonize the figures and the text and select a way of naming the blade status: for instance blade degradation.
- **General comment 2:** It is explained in section 2.2 that roughness represents a precursor to more significant aerofoil degradation, which is fine but in line 104 it is mentioned that sandpaper provides a simplified model of erosion. The suggestion is to remove the part of line 104 where it is said ‘While the sandpaper provides a simplified model of erosion...’ and just mention that P40 and P400 degradations are used as reference to calculate the airfoil polar degradation to be used in the aeroelastic model to assess the effect of the different parameters on airfoil performance.