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Interactive comment on "A review of wind turbine main-bearings: design, operation, modelling, damage mechanisms and fault detection" *by* Edward Hart et al.

Anonymous Referee #1

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This is a review paper on the design, operation, wear and fault detection of rolling element wind tubine main bearing systems. The review is well written with a clear structure throughout the paper. The authors should consider the following minor corrections/clarifications/additions to the paper.

1. Section 2 is short. The authors should consider adding a little bit more detail on the fundamental differences between geared and direct drive wind turbine drivetrains and perhaps a figure or some text that quanitifies the past and predicted future growth of rated wind turbine output and rotor size/weight over time. 2. In section 3.2, the text in the first few lines on page 7 concerning inputting expressions for blade moments in the

form of mean plus fluctuating components into Equations 5 & 6 resulting in 'the mean values cancelling' is not clear. The authors should consider adding some further steps in the analysis being described here. 3. Section 3.2.1 lines 14 & 15 It is stated that from equations 5 & 6 it follows that 'blade root bending moments with range Mrange result in hub moment fluctuations of 1.5Mrange.'. Again, it is not immediatley clear how this conclusions follows from these two equations. A more complete explanation is needed. 4. The authors should consider using 'gearbox end' and 'rotor end' when describing the low speed shaft rather than 'downstream end'. 5. Consider starting a new sentence in Section 4.1, line 2 on page 12 '....(Bergua et al, 2014). While this may be the case .....'. 6. Section 4.2 line 13 on page 12.'including having bearings in the air-gap diameter'. What does this mean? Should 'diameter' be 'clearance' or is something different being described here? 7. Section 7 page 21 line 8. The text in this line includes 'electrical erosion' the authors should state now this differs from wear & corrosion (already listed) of electrical components?

In summary this is a good review paper that in my opinion is worthy of publication in the journal subject to consideration of the minor points listed above.

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