

Interactive comment on “Periodic stability analysis of wind turbines operating in turbulent wind conditions” by Riccardo Riva et al.

Anonymous Referee #2

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This paper deals with an important problem in wind energy, the assessment of the periodic stability of wind turbine rotors. The paper is very well written and very comprehensive. This topic is of interest to the readers of the Wind Energy journal. This paper calls for the following comments. 1. The introduction section is well documented and references the right papers. Clearly, the work presented in this paper builds on the many of the past contributions of the authors to this topic. I believe the introduction should mention in a very explicit manner what the new contributions of this work are. What is incremental and what is new and different. This should allow the paper to have a sharper focus, and also to be shortened. The paper is not a review paper, but many sections of it read like a review paper. 2. The authors mention that the approach should satisfy the following criteria: “First, one would like to account with complete rigor for the periodicity of such systems, without introducing approximations of unknown effects.

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Second, one would like to formulate the analysis so that it is system-independent...” The first requirement is used to justify the use of Floquet theory. Unfortunately, the behavior of wind turbines is not fully periodic, nor is it linear. These limitations should be made more explicit from the beginning of the paper. 3. The appendices could be shortened, eliminating textbook material. In summary, the paper is well written and presents interesting material. The paper should be shortened, focusing more directly on the new contributions of this paper. This paper should be published in the Wind Energy journal.

[Interactive comment on Wind Energ. Sci. Discuss., doi:10.5194/wes-2015-3, 2016.](#)

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