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Interactive comment on "Top Level Rotor Optimisations based on Actuator Disc Theory" *by* Peter Jamieson

Anonymous Referee #1

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An interesting paper addressing different rotor design ideas and how the low induction rotor may help to further reduce the cost of energy when used as tip rotors. The paper has a nice introduction to classical wind turbine rotor aerodynamics and showing that the power production can be made higher by allowing the radius to be increased, but keeping the same root bending moment. Doing this the axial induction factor is decreased from 0.33 to a=0.2. This result is known but is taken further by searching for a more optimum distribution for the axial induction factor a(x). This is done by a formal optimization and describing a(x) with two parameters that together describe smooth and realistic distributions. The last part of the paper is very interesting since it describes and discusses various innovative ideas how to use these low induction rotors, especially on VAWTs. It would be nice if the derivation of equation (10) on the

bottom of page 10 is given.

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