

## ***Interactive comment on “A Method for Preliminary Rotor Design – Part 1: Radially Independent Actuator Disk model” by Kenneth Loenbaek et al.***

**Anonymous Referee #2**

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In the presented work, a novel method for the analysis of horizontal-axis wind turbines (HAWTs) is introduced. The proposed methodology, taking the name of RIAD (Radially Independent Actuator Disc), is based on a re-parametrisation of the Blade Element Momentum (BEM) method, currently adopted in turbine design and certification, in terms of distributions along the blade span of local thrust and power coefficient. As demonstrated by the authors throughout the paper, such strategy allows to re-formulate the performance assessment problem in a more physically sound way, clearly distinguishing the different aerodynamic loss contributions and their relationship with the turbine loads and power extraction. As a final result, the turbine preliminary design and optimization process is notably simplified.

The reviewer believes that the topic and the activity are very interesting, innovative

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and worthy of investigation. The adopted methodology is rigorous and clearly detailed throughout the whole paper, which is very well presented.

Based on the aforementioned comments, the publication of the paper in the present form is strongly recommended.

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