

Interactive comment on “OpenOA: An Open-Source Code Base for Operational Analysis of Wind Power Plants” by Mike Optis et al.

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We thank the reviewers for their feedback and recommendations for this paper. The feedback was well received and appreciated.

Both reviewers have commented on the lack of novel scientific contributions in this paper. We agree with this assessment. The intent of this paper was to present the open-source framework in which wind power plant performance assessments – novel or industry standard – could be developed and used by the wind energy community. The presentation of novel methodologies was not considered within scope of this paper and, because of that, we appreciate the fact that this paper may not be best suited to Wind Energy Science.

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That said, the OpenOA software does present a novel approach for calculating the long-term annual energy production (i.e. P50) for a wind power plant using operational data. Specifically, a Monte Carlo approach is used to estimate the uncertainty in the P50 by varying the inputs to and intermediate calculations within the P50 estimation process. The industry standard approach to estimating P50 uncertainty is to compute individual uncertainties (e.g., measurement uncertainty, interannual variability), assume these uncertainties are uncorrelated, and therefore combine them using a “square root of the sum of squares approach”. This approach overlooks potential correlations (positive or negative) in the uncertainty categories which a Monte Carlo approach is able to uncover.

Interesting results and insights have come from this Monte Carlo approach for which we are currently preparing a journal paper. It is possible to include these results in the currently submitted paper to increase its scientific novelty. However, we wonder whether this research would be better presented as a stand-alone manuscript to submit to Wind Energy Science and whether, as the reviewers suggest, the current manuscript would be best suited for a software engineering journal. To these questions we defer to the editor’s opinion and final decision.

For the moment, we have not responded to other specific feedback that Reviewer 1 has provided on the current paper. In the event that the editor feels that the current paper, with modifications, is suitable for Wind Energy Science, then we will happily respond to these specific questions.

Best regards, and we look forward to your response.

Mike Optis

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