Review of: "A Simplified Model for Propeller Thrust in Oblique Flow"

Paolo Gualtieri[1]

1 Dipartimento di Ingegneria Meccanica e Aerospaziale, Sapienza University of Rome, Italy

Potential competing interests: No potential competing interests to declare.

The paper proposes a simplified model to describe the thrust of a propeller in an oblique flow, starting from data obtained in purely axial conditions. The model considers negligible (or ineffective) cross-flow components and uses the projections in the axial direction to make predictions. The model prediction compares well against available experimental data in actual cross-flow conditions.

Overall, I found the paper clear in its logic and motivations. In the spirit of a constructive review process, I share with the authors some general considerations.

To begin with, please define all the symbols as soon as they are used in the equations.

In addition, in the panels of Figure 7, the symbols are as wide as one-half of the unit of the data axis. Please use smaller symbols and add error bars to compare the data.

To finish this short review, I would encourage the authors to go ahead and pursue the following point. The paper's introduction, which I found clear and convincing, poses in a correct and straightforward manner the aims of the paper as the need to predict in a quick and reasonable way the thrust of UAVs. The point where I invite the authors to add some discussion is the re-scaling of their data to actual values. Indeed, from the plots, the maximum thrust is on the order of 10N. Do the authors believe that their approach can be trusted when the values of the required thrust are two or three orders of magnitude larger? Please add a comment on this.

In conclusion, I recommend publication after considering the minor points discussed above.