

The submitted paper is relevant to the airborne wind energy community and addresses a modelling aspect of the kite dynamics that has, to the knowledge of the reviewer, not been addressed yet. The contribution of the paper is well-defined, and the scientific approach and methodology are clearly described. The paper is well written.

The reviewer does not note any flaws in the presented results, interpretations, and conclusions. However, some mention of Kitepower BV may be not necessary for the scientific purpose of the paper. The main comments are regarding some clarification that could be made and some advice to ease the reader's understanding. The list of comments is listed below.

5 : and ... and

11 (and 414) : "Hence, intricate centripetal force modelling is avoided, as seen in a single-point kite model." Could you provide a reference where this is done/needed or explain this in more detail. You also mention it in line 47, maybe you can elaborate on the need for the modelling of this force and give an example somewhere (Section 5 ?), for the one-point model.

19 : Figure 1 is a nice picture but I do not think it is the best to illustrate the hanging KCU when you then show Figure 3.

77 : Why are we talking about the 60 m² kite of Kitepower as it is not the subject of the measurement campaign ? If it is for advertising, it has no place in a scientific article.

119 : You should cite a reference or give the classical assumptions made for the one-point model compared to the one-point model.

191 : maybe refer to Appendix A for the optimization ? Or mention the optimization when citing or introducing your Appendix earlier.

251 : You previously often made mention of the point model and stated the advantages of the 2-point model against this last one. Would it be possible to compute the results with a one-point mass model at the centre of gravity of the kite + KCU, with 30 elements, for example?

268 : Tangential to what ? (sphere on which the kite is navigating I guess)

292 : The description of Fig 11 is not consistent with what is explained "The measured force shows distinct peaks during the turns" while the large peaks are from the blue line, identified as from "Dynamic model"

313 : Where is the comparison shown? Fig 10 ? Maybe say it already here

Fig 12 is not in a PDF format; any averaging operation for the orange curve ?

330 : add a comma “This discrepancy could be attributed to the high uncertainty of the position measurement during the turns, resulting in large modifications to the flight trajectory by the reconstruction. ”

358 : Maybe specify which tip you are talking about. Interior or exterior tip for the increase/decrease in aoa.

365 : “Per definition, the lift force generated by the kite rolls together with the kite and, when rolled, contributes to the centripetal force acting on the KCU ” This sentence is not very clear.

Appendices :

Fig A1: it is not very clear what is plotted, nor explicitly explained; Fig not in pdf format
The discussion of the Figure is a bit confusing. The discussions are not made in the order a, b, c, ... you talk about A1c, then A1a, then the other, then A1c again. In my opinion, the structure of this appendix could be improved to ease the understanding. In addition, some of the symbols are not described (what is $v_{c,r}$?).