

SHORT SUMMARY

The paper titled “Gravity waves above the Northern Atlantic and Europe during streamer events using Aeolus” has been revised somewhat to address points raised by this and other reviewers’ comments. It has been improved, however there are still a number of issues that this reviewer has with the manuscript in its current form. These would need addressing before publication by AMT can be recommended by this reviewer.

GENERAL COMMENTS

1) This reviewer still has concerns about the method used to extract GW perturbations and there is no substantial development of the analysis technique or a wider analysis which might help to diminish these concerns. The authors have instead sought to clarify in the discussion the reasons for their previous method choice, which they do by considering the tropopause as the main non-GW perturbation source, and by using the ‘repeating spline’ method to avoid ‘strong deflections’. Although the reviewer would prefer to see a consideration for other important wind perturbation sources in the troposphere, the authors do now clearly discuss this limitation of their method. Indeed, the authors have added some caveats into the text to clarify the shortfalls of the GW extraction method as a consequence of the techniques they are using.

2) The focus of the study has not been widened much in response to the previous comments by all reviewers. It seems a little unusual to focus on just streamer events (and one specific type at that – see author comment on P05.L107 on page 5 of their response to RC2) and only using Aeolus, for an AMT paper, which is why the suggestion to widen this focus was made previously. Would this article be better suited to a different journal if it is to be so focused, as the authors have acknowledged that it is?

3) Further changes are necessary to some of the figures before they are of publishable quality. Notably, figure 10 is very difficult to understand with the filled contour method currently used to plot the data. Although the authors have clarified the dates corresponding to each week and have defended their colour scale choice, they have not changed the plotting technique to make it easier to read. Furthermore, it is very difficult to follow the story being told by this figure, in tandem with the corresponding text.

SPECIFIC COMMENTS

PXX.LXX Comment

P03.L63 However, for parts of the GW spectrum, equation (3)... (Please insert a comma after ‘spectrum’ to avoid ambiguity.)

P03.L87 The phrase “especially the precision, since it is not removed through the detrending procedure in contrast to a bias” is now a little confusing. Why is the precision being removed? For Aeolus, which is more challenging, the precision or the accuracy?

P08.L178 This now reads a bit better, the authors have clarified that the variable being added is only being corrected for the satellite’s orbital node and it is clearer.

FINAL COMMENT

Overall, no significant changes have been made to the scientific method, scientific quality or presentation quality for this manuscript, and so it is not yet possible to recommend that the article be accepted for publication without some of the changes outlined above and previously. There have been some good alterations to the text which add important clarifications, however further revisions to the method and quality are still required for this reviewer to accept the paper.