

19 November 2018

Dear Prof. Ari Laaksonen:

RE: Manuscript #: acp-2018-507

Enclosed for your consideration is the revised manuscript titled “**Application of a Hygroscopicity-Tandem Differential Mobility Analyzer for characterizing PM Emissions in exhaust plumes from an Aircraft Engine burning Conventional and Alternative fuels**” (acp-2018-507). We would like to thank the reviewers for their thorough review of our paper, and their suggestions and recommendations.

You can see that this is our second round of reviewer comments and revisions / responses.

The reviewer’s comments were valuable and we have incorporated them into our manuscript. We hope that you will find the revised manuscript suitable for publication in Atmospheric Chemistry and Physics.

Sincerely,

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Reviewer comments:

The authors clarified technical questions by reviewers, corrected minor grammatical issues and overall improved the document. As stated on the first review, the authors describe well their analyzer system and pertinent application results. The aerosol hygroscopic property measurements are relevant, especially with the inclusion and comparison for alternative fuels. I still highly recommend the paper for publication. I offer the following suggested edits and comments:

Page #	Line #	Suggested Edits or Comments
2	24	Delete "measured"
3	14	Delete "were"
3	18	You are missing something between the numbers "0.91 0.99"
8	6	Period missing at the end of the sentence
10	5	Delete "was"
10	7	Sentence should not end with a preposition
10	12	Change "data is" to "data are"
10	14	Was taught to generally avoid using "very" in formal papers, but ok with me personally.
10	18	Delete the extra period at the end of the sentence
11	5	Remove parentheses around the "3"
11	5	Consider rewording to "Fig. 3 shows plots of κ vs. X_d for the same four chemicals
13	6	Delete the period after the "4"
13	7	Suggest adding the word "value" to read " ... highest SR value ..."
13	7	Add comma after the word "extremes"
14	9	Sentence seems out of order. You state "Also shown ... " before you introduce the figure
16	15	Should be plural "analyses ... have"
17	3	Put a space between the value and the units ... (in several places)
17	7	Add space between value and units: 143 m instead of 143m
17		Suggest adding the words here in yellow: "The exhaust was transported through the tube to a small trailer ..."
17		Consider stating all dimensions in meters, maybe put 2" in parentheses
17	17	Add a space between the values and their units
17	18	Add a space between the value and the units
17	29	Wording indicates all the SO ₂ goes to SO ₃ and H ₂ SO ₄ . I don't think this is true. If you agree, add a qualifier like " a portion of the SO ₂ ..."
18	14	Separate "withthe"
19	4	Add a space between the value and the units
21	4	Suggest adding the word particle → "... particle sources ..."

Response:

We thank the reviewer for his/her valuable comments. We have made all the changes as the reviewer suggested above.