

Interactive comment on “Application of a Hygroscopicity Tandem Differential Mobility Analyzer for characterizing PM Emissions in exhaust plumes from an Aircraft Engine burning Conventional and Alternative fuels” by Max B. Trueblood et al.

Max B. Trueblood et al.

trueblud@mst.edu

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Referee #3 (Dr Robert Howard)

The authors describe well their analyzer system and pertinent application results. The aerosol hydroscopic property measurements are relevant, especially with the inclusion

C1

and comparison for alternative fuels. I highly recommend the paper for publication. I offer the following suggested edits and comments:

We thank the referee for a very thorough review of our manuscript.

–reviewer’s comments (in italic typeset, blue font). –a point-by-point response (in regular typeset, black font)

RC#1 Page 1, Line 20 Replace “fuels” w “types of fuel” RESPONSE #1: We have made that replacement.

RC#2 Page 1, Line 23 “decreased” is spelled incorrectly RESPONSE #2: We have made that correction.

RC#3 Page 2, Line 3 Change “on” to “onto” RESPONSE #3: We have made that correction.

RC#4 Page 2, Line 16 Place a comma after “plume” RESPONSE #4: We have made that correction.

RC#5 Page 2, Line 31 Change “45s” to “45 s” or better, change to “45 seconds” RESPONSE #5: We have made the correction to 45 seconds.

RC#6 Page 3, Line 7 “an ice bath to dry the sample” ... is not fully unclear. Please elaborate. RESPONSE #6: We have made that clarification.

RC#7 Page 3, Line 14: Change “poly-dispersed aerosol was classified” to “poly-dispersed aerosol was classified by size” RESPONSE #7: We have made that change.

RC#8 Page 3, Line 16 Throughout the paper, the tense switches from “was” to “is”. I am not sure the change is always correct. Maybe an expert in grammar should review and make suggestions. RESPONSE #8: We have made these corrections.

RC#9 Page 3, Line 17-18 The word “now” is not necessary and should not be used in this manner in a formal paper. RESPONSE #9: We have made these corrections.

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RC#10 Page 3, Line 20 Suggest that "Valves V2 and V3 can direct ..." be changed to "Valves V2 and V3 are used to ..." RESPONSE #10: We have made these corrections.

RC#11 Page 3, Line 21 Suggest that "Valves V4 and V5 achieve..." be changed to "Valves V4 and V5 are used to achieve..." RESPONSE #11: We have made these corrections.

RC#12 Page 3, Line 25-28 I consulted with colleagues and we are not familiar with the use of the term "thermostat" being used as a verb. Suggest not using the term "thermostated" in a formal paper. RESPONSE #12: We have made appropriate changes.

RC#13 Page 4, Line 5 Add comma after "frequency" RESPONSE #13: We have made that correction.

RC#14 Page 4, Line 6 Change "it(1)" to "it (1)" RESPONSE #14: We have made that change.

RC#15 Page 4, Line 31 Add comma after "Thus" RESPONSE #15: We have made that change.

RC#16 Page 5, Line 1 The word "very" should not be used in a formal paper. RESPONSE #16: We have made that change.

RC#17 Page 6, Line 2 Suggest using a simpler Fig. 1 title with this long explanation in the body text. RESPONSE #17: We have made that change.

RC#18 Page 6, Line 6 "discuss" should be "discusses" RESPONSE #18: We have made that change.

RC#19 Page 6, Line 9 Change "deliver a given diameter Xd particle" to "deliver sample with a given diameter Xd particles" RESPONSE #19: We have made that change.

RC#20 Page 6, Line 10 "initiates voltage sweep" should be "initiates a voltage sweep" RESPONSE #20: We have made that change.

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RC#21 Page 7, Line 11-12 Change "... this calibration is then later utilized ..." to "... this calibration is utilized" RESPONSE #21: We have made that change.

RC#22 Page 7, Line 7 Change "when it is exposed ..." to "... when exposed ..." RESPONSE #22: We have made that change.

RC#23 Page 15, Line 4 Change "will be" to "are" RESPONSE #23: We have made that change.

RC#24 Page 15, Line 22 Change "20nm" to "20 nm" RESPONSE #24: We have made that change.

RC#25 Page 15, Line 28 Change "an existing soot particle to form a hybrid particle that subsequently has a significant water soluble component" to "existing soot particles to form hybrid particles that subsequently have significant water soluble components" RESPONSE #25: We have made that change.

RC#26 Page 16, Line 15 Change "This data is" to "These data are" [Throughout my career, my technical editing staff have required "data" to be treated as plural, regardless of the use. RESPONSE #26: We have made that change.

RC#27 Page 18, Line 13 Change "plots the GF" to "plots, the GF" or, better, combine with the previous sentence using "where" RESPONSE #27: We have made appropriate changes.

RC#28 Page 18, Line 14 Add comma, change "(FT plus THT) the GF is" to "(FT plus THT), the GF is" RESPONSE #28: We have made appropriate changes.

RC#29 Page 20, Line 1 Add colon, change "These findings are (1)" to " These findings are: (1)" RESPONSE #29: We have made appropriate changes.

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