

Interactive comment on “The AquaVIT-1 intercomparison of atmospheric water vapor measurement techniques” by D. W. Fahey et al.

Anonymous Referee #1

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This reviewer would rate the paper excellent (1) for scientific significance, scientific quality, and presentation quality.

The laboratory intercomparison of water vapor instruments is relevant to addressing the differences observed in multiple airborne campaigns over many years. While not all flight conditions could be simulated, some limits could be placed on basic instrument calibration and performance characteristics. This paper serves as an important benchmark for future instrument intercomparisons. Substantial conclusions based on a robust dataset about the performance of both the core and non-core instruments over 3 water mixing ratio ranges are presented.

The paper is well written, well structured, with just the right amount of experimental

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detail and description for the reader to understand what was done, adequate supplemental material in the appendix on each instrument to understand the conclusions, appropriate references, and nothing extraneous included. The title reflects the content of the paper, and the abstract provides a clear and concise summary of the project.

Only a few minor issues were noticed: On page 3202 line 29, “AIDA TDL” is referenced, rather than the instrument name used elsewhere in the paper.

Page 3209 line 22, suggest “Consequently,” at beginning of sentence.

Page 3217 line 17 “VCSEL instruments” were not referenced earlier in the paper. Using the instrument names of Table 1 would be better.

Page 3234 Figure 1 caption. Should be commas after JLH and ALIAS in second to last line.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 3159, 2014.

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