

Authors' Response to Reviews of

Data collected using small uncrewed aircraft system during the TRacking Aerosol Convection Interactions Experiment (TRACER)

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RC: *Reviewers' Comment*, AR: Authors' Response, Manuscript Text

RC: *p.11, l.237ff: Calibration of MHPs is usually done with high-order polynomials. An extrapolation outside the calibration range can be very high and does not have traceable uncertainty and thus should be discarded.*

AR: We appreciate the reviewer's understanding of the MHP calibration process and this comment. We agree that extrapolation beyond the calibration range is dangerous and should be treated with extreme caution. However, rather than discarding data, we prefer to use data quality flags. As stated in the manuscript, any data points where the absolute values of alpha or beta were greater than 10 degrees were flagged as "questionable". Further, any data points where alpha or beta are deemed to be greater than 20 degrees are marked as "bad". The primary recommendation for data users is to only use points where data are flagged as "good", i.e., where alpha and beta are well within the calibrated range. To make this clear, we have added the following text to the manuscript (l.245-248): "Data users should be aware that extending multihole probe calibration coefficients beyond angles tested in the wind tunnel can result in highly non-linear errors in estimation of angle of attack and sideslip angle. Such errors significantly impact wind estimation. As such users are advised to only use wind data where the wind_flag variable is equal to zero. These values are well within the calibrated range of the multihole probe."