

***Interactive comment on “ARIS-Campaign:
intercomparison of three ground based 22 GHz
radiometers for middle atmospheric water vapor at
the Zugspitze in winter 2009” by C. Straub et al.***

Anonymous Referee #1

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It is very satisfying to see that ground based microwave remote sensing have reached a maturity and now can be regarded as a well known and reliable method for observing the atmosphere. Fig 1 summarizes the last 10 years of achievements. Three different instruments show almost uncolored spectra within 100 MHz of the line centre. IMpressive! Direct comparisons between different instruments performed at the same site are, of course, the best method to give reliable results. I think that the paper is important and well written but I have five comments 1; 3.1 Measurement noise Page 3370 line 19 “by the simulated Gaussian noise of a total power spectrum with the same value for Tsky” I think this needs to be explained by a sentence or two 2; Figure 2 (connected to

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part 3.1) I think you should comment on the systematic errors in a in cWASPAM3 and Mira5 3; 4 Retrieval Why not mention that AoA is the same as measurement response? 4; Figure 5 (connected to part 4) Why not have a scale for AoA at the top of the figures? 5; 5 Intercomparison of profiles I think you should discuss possible reasons for the dry bias of Mira5. Is it perhaps a wet bias of the other two instruments?

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