

## ***Interactive comment on “Noise performance of microwave humidity sounders over their life time” by Imke Hans et al.***

**Anonymous Referee #1**

Received and published: 20 September 2017

Summary:

This study provides an assessment of uncertainties in the data record of the microwave humidity sounders due to random noise. The study is motivated by the fact that a time varying noise estimate for each sensor is not readily available to data users. They use the allan variance method to calculate the noise in both the cold and warm NEDT. The result is a useful time series of NEDT for all of the legacy sensors, which can inform long-term data records.

The methods are very clearly laid out. No notable flaws are evident. I have only a few minor comments on the paper.

Specific comments:

C1

Line 5: NEDT is a measure of precision (or noise). Accuracy is bias, in this case due to calibration. Precision and accuracy are different and independent quantities. Here you evaluate the noise so you need to change ‘accuracy’ to ‘precision’.

It would be nice for an unfamiliar reader such as myself to have a table that maps channel number into frequency, bandwidth, prelaunch NEDT.

Page 11, line 5: missing date fro reference (?)

Figures 3/5: Why do you just show the two red pixels per panel? Is it for clarity? Please comment in caption.

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-277, 2017.

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