

Interactive comment on “MIAWARA-C, a new ground based water vapor radiometer for measurement campaigns” by C. Straub et al.

Anonymous Referee #2

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This paper describing a novel instrument following new ideas fits well within the scope of AMT and should be published. It is generally well written and offers ample of references. Nevertheless a few clarifications should be worked out before publication. In particular the fact, that the authors presenting parallel an intended version, which was unsatisfactory, a total power version, which seems to be even worse and the finally used version may lead to some confusion. My preference would be to become more obviously directed to the real version of operation. At the same time, some technical conclusions are not fully convincing and some terms are not used in a common way.

The text in 2.3 states, that the correlation receiver configuration is more stable than the total power configuration. My understanding of Fig. 5 is the opposite. Please clarify!

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In 2.3.1 I'm unable to follow the arguments on cold noise sources. The (to my knowledge) only commercially available model of Colfet is specified to replace LN2 loads and should reach almost 80K. 77K is common from LN2 loads, lower radiation temperatures are difficult to achieve even from cryogenic systems. What are your stated requirements in terms of noise temperature?

What means “spectral non linearity”? Power linearity is of concern for all radiometers and frequency linearity is a basic feature of any digital FFT spectrometer. The frequency dependent feature was discussed in the community as being specific for the particular model of FFT spectrometer, which is used here. Could it be a simple (linear with power) baseline feature? It seems to be common praxis to subsume undetermined features as “nonlinearity”. I would appreciate more specific wordings.

In view of the versatile calibration scheme a suitable illustration might be helpful.

Some minor corrections to the text:

2395/22: easy switching: not depending from 90° off axis geometry

2395/26: Another advantage of (instead to)

2395/28: equivalent: in what sense, before you said the opposite

2396/5: transmitting antenna instead transmitter

2396/21: for it is redundant

2397/25: 30.5 kHz must be channel spacing, frequency resolution ought to be higher

2398/5: receiver(s): please be unambiguous

2398/6: configuration instead receiver. The general statement on total power receivers is not correct in view of the different calibration schemes in use.

2399/13: strongest is incorrect, better e.g. most objectionable

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