

## ***Interactive comment on “Monitoring the differential reflectivity and receiver calibration for the German polarimetric weather radar network” by Michael Frech and John Hubbert***

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The manuscript documents the monitoring of the ZDR and receiver calibration of the German weather radar systems in great detail. A temperature dependent bias has been found and attributed to the antenna assembly. The paper is well written and deserves publication within AMT after some minor modifications.

General remarks:

The manuscript is quite elongate and could be shortened removing details which are not relevant or which are repeated a few times. On the other hand it gives sufficient

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details to follow the various steps of analysis. Considering this it is worth to have more details than what would be necessary for a pure scientific publication.

What I feel confusing is the fact that in the beginning it is suggested that the observed temperature dependence of the ZDR bias is caused by the receiver electronics, whereas the analysis shows that it seems to be related to the antenna assembly. In particular, the discussion of Fig. 13 does imply the electronics origin.

Minor remarks (probably there are more typos):

Page 2, line 5 and 10: give credit to Seliga & Bringi, 1976, they did some analysis on required ZDR accuracy

Page 3, line 3-6: partly repeated from page 2 line 15

Page 3, line 12: the sun is a source of electromagnetic radiation, not only in S-band

Page 5, line 3-5: repeated from page 3 line 3-6

Page 5, line 12: Bringi and Chandrasekar 2001

Page 6, line 7: there is no section 11

Page 6, line 8-16: this passage should go somewhere else, maybe to section 3.1

Page 6, line 27-30: the sentences about the three circulators could be omitted.

Page 6, line 32: the data format is not relevant for the paper

Page 9, line 4 and 13-15: keep the advantages of gain together

Page 9, line 13: ... in both \*gain\* estimates

Figure 2, 3, and 6: what is the meaning of the red and blue circles and + and x

Page 14, line 19: is there any possibility to see whether the contributions of the sun hits are equally distributed over the day or whether they are more frequent in the morning and evening hours (what would be my assumption for measurements in June)

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Page 14, line 21: was there sufficient precipitation for the days prior to the days shown?

Page 14, line 24 and 25: the figures show about -0.2 and -0.05 for 3 June and 15 June, respectively

Page 17, line 2; ... is indicated \*by\* the straight lines

Page 17, line 10: ... appear reasonable \*. The deviation ...

Figure 11 and 12: why not time on x-axis? The other figures show time on x-axis

Page 19, line 2-7: the detailed analysis suggests that the electronics is the cause of the temperature dependence, but this is revoked later on

Page 19, line 11: ... and the resulting \*??\* is shown ...

Page 19, line 18: one-point calibration is better known as "single-point calibration"

Page 19, line 24: show insertion points at Fig. 1

Page 19, line 25: ... power difference \*is\* inconsequential for ...

Page 26, line 1: located in \*front\* of the LNAs . . .

Page 26, line 3: at ranges ??at first?? close to the radar

Page 27, line 3: ... similarly to the Hohenpeißenberg \*, MHP\* boxscans.

Page 28, line 19: since S is related to antenna temperature, the radome temperature range of 15 to 25°C should be given and not the one related to the LNAs

Figure 21: time on x-axis like in Fig. 7 and 8

Page 30, line 1: ... for the Hohenpeißenberg \*radar\* that the ...

Page 30, line 29: I guess that the dates are for the Hohenpeißenberg radar

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