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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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We thank the reviewer for his helpful comments which helped to sharpen and clarify the paper.

With respect to the possible confusion regarding analysis on the source of the observed temperature dependence: The main findings are summarized in the abstract. So the overall picture is layed out there and the paper takes the reader step by step through the analysis steps which then eventually lead to the conclusion, that, consistent with analysis of Hubbert (2017), the temperature dependence of ZDR can be attributed to the antenna assembly.

Changes to the manuscript:

We have considered the minor remarks (grammar, typos and stylistic) when revising the paper. Some specific responses to some of the remarks:

p. 3, l 12: we have changed the statement as suggested.

p. 6, l 8-16: we moved this part to page 8, section 3.1.

p 6. l. 27-30: the section on the circulators has been removed.

Figure 2,3,6: question on the symbold: these are the estimated pointing biases (discussed in Frech et al, 2019) for the H and V polarization. That information is now given in the caption.

p.14, l 9: You mean the sunhits from operational scanning? This could be achieved by plotting the solar azimuth instead of time. Such a representation is more relevant if we want to compare the azimuth and elevation bias from operational scanning compared to elevation and azimuth bias from solar box scans. This is discussed in Frech et al., 2019

p. 14, l 21: the date with sufficient precipitation is now indicated in the captions: for the case study from 3 June (solar boxscans) the corresponding birdbath data are from 1 June. For the 53 June case, the birdbath data shown are from 13 June.

Figure 11 and 12: (time versus plotting azimuth sun): We have changed the x-axis and plot the gain retrieval versus the time, so we are consistent with the previous plots (instead of plotting the solar azimuth).

P19, l 2-7: we now make the intitial statement that the S temperature sensitivity actually can be attributed to the antenna assembly. With this we think the reader is better able to follow the line of data analysis.

P. 19, l 24: Fig 1 is a schematic picture with a focus on the reference planes. It should not reflect the all elements of the tx and rx path of our system. We now refer to the

calibration diagram of the DWD radar system in Frech et al 2017 (Figure 2 therein), where the location of the cross guide couplers in the rx/tx path are shown.

P 28, l. 19: we now use the radome temperature range as suggested.

Fig 21: Here we keep the solar azimuth because we compare data from different dates (separated over a month).

P. 30, l. 29: Yes this is all Hohenpeißenberg data. This information is now included in the caption and the text.

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