**Atmospheric
Measurement
Techniques**
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Discussions

Interactive comment on "A novel approach for absolute radar calibration" *by* C. Merker et al.

Anonymous Referee #3

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The authors describe a novel method for calibration of radars. A special setup of the involved radar systems is required. The manuscript is well prepared and certainly deserves publication.

General comments:

1. Could you state about the effects of wrong estimation of the DSD by MRR? How large would be the influence in the presence of vertical air motion (e.g. 0.5 m/s) or spectral broadening by turbulence?

2. I think I didn't understand completely the setup in chapter 4. Did you use "only" the reflectivity profile of a horizontal looking radar to estimate a profile, ignoring real attenuation and real DSD (i.e. non Marshall-Palmer type)?

3. In case the measurement setup in Lindenberg is suited for your method, it would be

nice if you could show at least one event with real data, i.e. the temporal evolution of C3.

4. Could you give some statements, how the method would perform if you use for R1 and R2 less attenuating radars (e.g. X-band).

Specific comments:

p. 1673, l. 3: rain gauges are certainly not accurate in windy conditions

p. 1675 and 1676: it's obvious, but maybe you can affirm that C3 in Eq. (2) is the same as C3 in Eq. (4)

p. 1677, Eq. (7) is only valid, if you assume that DSD is constant between z=0 and z=s3; thus the whole method depends on this assumption (?)

p. 1682, l. 3: what are the criteria to define the TDBZ threshold at 1.4 dBz?

p. 1684, l. 20: shouldn't it read: "over a 3246 sample of filtered time steps"?

p. 1693: the colorscale of Fig. 4a is confusing

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 1671, 2015.