

Interactive comment on “Temperature profiles with bi-static Doppler-RASS and their accuracy” by B. Hennemuth et al.

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General comments:

The paper describes improved corrections to Doppler-RASS temperature profiles, and goes on to show some application examples. The techniques and data are sound. Some improvements to the presentation could be made.

The paper shows that the height-dependent geometric correction after Kon is necessary and useful. However, the selection of the specific value for the effective antenna radius is not clearly justified. Does the selected value minimize some statistical measure or cost function, or is it purely empirical?

Corrected profiles shown in figures 4, 7, and 9 seem reasonable for the meteorological
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conditions, with the possible exception of the lowest 1-2 range gates. The tower temperatures do not always match the RASS profiles, however. This is especially evident when the surface layer should be neutral or unstable, for example at 15:0 and 17:0 in figure 7, and after 11:0 in figure 9. This could indicate a need for further correction of the lowest 1-2 heights of the RASS profile, and/or a problem with the 10 m temperature. Is the 10 m measurement at Munich well calibrated?

Specific comments:

1. Equation 1 shows units in an unusual way. It would be clearer to indicate the units in the text following the equation.
2. p.1082, line 7: The "height of maximum correction..." is not clear from the figure.

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