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Atmospheric Measurement Techniques Discussions

Interactive comment on "A sun-tracking method to improve the pointing accuracy of weather radar" *by* X. Muth et al.

Anonymous Referee #1

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This paper presents a technique to correct for the instrumental errors that affect the pointing accuracy of a weather radar antenna. The model is validated using digital terrain data. This paper is relevant, and appropriate for AMT readers and it is well written. The readers of this journal would benefit from this paper. However, there are some specific comments that the authors should address and clarify prior to publication:

1) In page 5577, the authors mentioned that when collecting sun measurements 'the scanning procedure has to be accurately synchronized in time to avoid additional uncertainty'. Can the authors give an indication of the expected error due to timing errors (e.g. from 1sec to 1min)?

2) The authors use DEM as a reference to validate the corrections. However, there are

no comments regarding the grid resolution of the DEM data. Will this have an effect in the comparisons? Also, what's the vertical resolution of the DEM? Will the vertical resolution influence the comparisons?

3) In page 5579, it was mentioned that 'the recorded profiles which have hit the ground are detected by using a threshold which takes the decrease of radar power density with distance into account' and then this power is somehow translated into ground elevation and position. However, in order to do this, the propagation of the radar beam and the beam power profile have to be defined and this will influence the calculations. Can you comment on this? Can you include this uncertainty in your model?

4) Where is the dotted line in figure 8?

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 5569, 2011.