

## ***Interactive comment on “Evaluation of gridded Scanning ARM Cloud Radar reflectivity observations and vertical Doppler velocity retrievals” by K. Lamer et al.***

**K. Lamer**

katia.lamer@mail.mcgill.ca

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Dear reviewer, Thank you for participating to the discussion, Below you can find a point-by-point answer to you questions and suggestions.

Format Page: Line: Comments or technical changes requested by the reviewer Answer provided by the authors

9580: 7: ... Range-Height Indicator ... The sentence has been corrected.

15: ... zenith-pointing .. The sentence has been corrected.

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16: ... observed, and The sentence has been corrected.

20: ... 3-D cloud dynamical ... The sentence has been corrected.

22: ... more-realistic ... The sentence has been corrected.

9581: 11: and introduces uncertainties in retrievals for cloud properties ... The sentence has been corrected.

23: ...(Plane-Position Indicator) ... The sentence has been corrected.

26: ... cross-wind scan strategy ... The sentence has been corrected.

27: ... range-height indicator ... The sentence has been corrected.

9582: 17: ... scan strategy, and raw data ... The sentence has been corrected.

23: ...mid 90's... The sentence has been corrected.

9583: 1-4: Are there any references supporting this statement? No, this is a statement the authors came to and is also a generally accepted statement. This study treated data from the KaSACR and the KAZR (multiple collocated instruments), as well as it investigated various gridding schemes (different methodologies applied to measurements).

9584: 6: ...clouds, insects, and ground clutter The sentence has been corrected.

21: Please give a reference to the insect filter technique: (Kollias P., I. Jo P. Borque P., A. Tatarevic, K. Lamer, N. Bharadwaj, K., Widener, K., Johnson and E. Clothiaux 2013: Scanning ARM Cloud Radars – Part II: Data Quality Control and Processing. Accepted to J. Atmos. Oceanic Technology.)? The reference is given at the end of the post-processing section is it is relevant for the entire section. 9585: 19-27: How is it made sure that 100 The selection of 100 m is based on examination of a large dataset of ceilometer cloud base height detection and radar-based cloud base detection during non precipitating conditions. Even in the absence of drizzle, the two sensors do not

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necessarily report the same thing. They have different vertical resolution (15 m vs 45 m), different scattering mechanism that make their backscatter energy to depend on different parts of the particle size distribution. Thus, the selection of 100 m ensure that we are above the expected RMS between the two sensors and the disagreement is due to the presence of echoes that the radar mainly sees (drizzle particles).

9586: 15: ...distance-dependent... The sentence has been corrected.

17: ...nearest-neighbour ... add hyphen to all occurrences? The authors believe a hyphen is not necessary.

9587: 18: ...a sequence of 60 of such ... The sentence has been corrected.

25: ...polar-coordinate... The sentence has been corrected.

25: ...height-along-scan.... The sentence has been corrected.

9588: 5: ...weight on the grid point value... The sentence has been corrected.

9589: 16: ...smallest rectangle...? The sentence has been corrected to: ...the smallest rectangle in area. . .

27: ...Maximum value, mean value, ... The sentence has been corrected.

9590: 11: ... user-dependent... The sentence has been corrected.

12: ... ,grid points are... The sentence has been corrected.

23: ... thus varies as function ... The sentence has been corrected.

9591: use 'mean-value' and 'maximum-value'? → add hyphen to all occurrences? The authors believe a hyphen is not necessary. 9592: 4: ...mean-value interpolation ... The sentence has been corrected.

9596: 21: ...range-height plane. ... The sentence has been corrected.

9598: 6: ...retrieval techniques... The sentence has been corrected.

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9599: 11: ...of marine boundary layer clouds... The sentence has been corrected.

26: ...observations are initially post-processed... The sentence has been corrected.

28: ...velocity folding, and (iv) ... The sentence has been corrected.

9560: 1: ...polar-coordinate... The sentence has been corrected.

9602: 5: ... elevation angles lower than ... The sentence has been corrected.

9603: 4-5: What's the message of the phrase '... application of distance depending scheme based on chosen weighting function.'? The sentence is meant to give an idea to the reader about the most commonly used way to grid data.

The sentence can be rephrased to: In the standard approach, for each grid point, all observational values within a specified radius of influence are used as an input to a gridding scheme and its associated weighting function (ex: Barnes, Cressman, ect.).

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Interactive comment on Atmos. Meas. Tech. Discuss., 6, 9579, 2013.

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