

Interactive comment on “An integrated approach to monitor the calibration stability of operational dual-polarization radars” by M. Vaccarone et al.

Anonymous Referee #2

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This paper illustrates how a combination of monitoring techniques can quantify the calibration bias in a network of radars with a higher degree of confidence than would be possible by just using individual techniques.

None of the techniques used are strictly speaking new and all them are part in some form or another of the regular procedures of most of the National Weather Services (or at least the most advanced ones). Recommendations in that sense have been performed in the past by, for example, the OPERA programme of the EUMETNET and in specialised workshops and conferences. However, it is true that a global view of those calibration techniques and their practical implementation on an operational network is lacking in the literature.

This paper has the potential to offer just that because it is clear, well-written and offers

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practical examples on the use of the different techniques. However, I think there are two items that are missing: In the first place, the bibliography related to each technique should be expanded significantly. As it is the reader cannot be aware of the effort placed by the entire community in developing monitoring and calibration techniques. In the second place, I think the paper should better illustrate the impact that a proper calibration has on the final products, notably QPE. I suggest, for example, to reprocess data from one of the precipitation events examined during the monitoring period, calibrated according to the results, and objectively compare it (using rain gauges for example) with the output of the real-time processing.

If such effort is undertaken I would warmly recommend its publication.

General comments:

Section 3.1 It should be clear in the text that there are many different dual-polarization estimates of rainfall not just two.

Section 4.1 The results of the self-consistency should be shown for the entire monitoring period and the criteria used to discard the measurements. As pointed in the conclusions of the paper, the selection of the data is a major stumbling block for the automatization of the technique. It would be interesting to show just that.

Specific comments:

Page 7-line 19: ... a uniform ...

Page 11-line 29: ...but in the following...

Bibliography

OPERA 3-WP1.4b “Project E-NradTech “Evaluation of New Radar Technologies”
Subproject 1: Operational monitoring and use of polarimetric C and S-band radars.”
http://www.eumetnet.eu/sites/default/files/OPERA_2012_03_Operational_polarimetry_in_C_

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