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Geoscientific Instrumentation Methods and Data Systems Discussions

Interactive comment on "A mobile X-POL weather radar for hydrometeorological applications in the metropolitan area of São Paulo, Brazil" *by* A. J. Pereira Filho

Anonymous Referee #2

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A mobile X-POL weather radar for hydrometeorological applications in the metropolitan area of Sao Paulo, Brazil

The paper deals with deployment and use of a XPOL radar to study both rain events and the associated boundaries layer conditions leading to severe precipitations over the MASP. The paper does not present overly original nor innovative results. None the less it demonstrates the interest of XPOL radars to study not only the rain structures but the associated clear air environmental conditions. The overall quality of the paper is good. The three cases of sea breeze interaction with rain systems are scientifically interesting. On the other hand, the paper in my opinion is a little unbalanced between

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the description of the system and the case studies, the latter being the most interesting. I would suggest to increase the part on the case studies and move the technical details in annexe for instance.

Major Comments:

p. 180, l. 10-11: Could you explain the meaning of “low” azimuth rotation and please add a reference on Zdr calibration technique?

p. 180, l. 22: Could you elaborate on the attenuation problem? For instance how does the attenuation might affect your understanding of the meteorological situation (“without any attenuation corrections”).

p. 181, l 21: Could you explain more precisely what is exactly corrected in “the corrected reflectivity”?

p. 181, l. 27: As “centroid plotting” is an elaborated product, you could add a reference.

p. 183, l. 9: Could you specify the series of elevation angles used in the scan modes?

p. 184, l.15-16: You say “the altitude of MXPOL was 760m so heights are changed to altitude by adding 760m.” Nevertheless in Fig. 5, the y-axis label is “height” and we can’t distinguish clearly the altitude of the radar.

p. 185, l. 14-15: “The reflectivity fields were obtained at 5min time interval and animated to identify. . .”. The sentence is ambiguous. Could you explain more precisely the technique that you used and for what purpose?

p. 186, l. 9: Fig. 7 shows the results of an event on the 12 February 2008, but the legend of the fig. 7 p. 200 indicates the 16 January 2008.

p. 186, l. 21: What does “unfiltered reflectivity” mean?

p. 186, l. 29: You should elaborate on the comparison between the S band and the X band radar and/or add some references.

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p. 188, l. 15-16: The part on the hail detection is very interesting but the comments associated to Fig. 10 should be more elaborate on that particular topic.

p. 199 to 204: As a general comment on the figures, the font size is too small, units are not always specified.

Minor Comments:

p. 178, l. 15: “mood” should be “mud”

p. 178, l. 22: “mood” should be “mud”

p. 179, l. 1: “Fig. 1” should be “Fig. 3a”

p. 179, l. 6: “and” should be “an”

p. 179, l. 8: I suggest you could precise the meaning of the sentence by changing “mitigate effects of recurrent. . .” in “ mitigate effects on population of recurrent. . .”

p. 182, l. 1: Technical description the X-POL. You could move this paragraph (l. 1 to l. 12) p. 181 in the wake of the l. 12.

p. 184, l. 8: “flack” should be “flank”

p. 185, l. 1: “biases” should be “bias”

Please also note the supplement to this comment:
http://www.geosci-instrum-method-data-syst-discuss.net/2/C95/2012/gid-2-C95-2012-supplement.pdf

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Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., 2, 177, 2012.