

## ***Interactive comment on “G-band atmospheric radars: new frontiers in cloud physics” by A. Battaglia et al.***

**Anonymous Referee #1**

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In this paper presents strong and convincing arguments in favor of investigating active sensing at G-band frequencies, so far almost unexploited and to promote the development and deployment of such sensors. Excellent and very comprehensive descriptions of unsolved key aspects of clouds modeling that can take advantage from G band radars are presented with due references to previous works.

I have just a few comments on section 5 (Recommended technical specifications for a 220-GHz radar). Specification are conceived for dual-frequency observations (35–220 GHz): the first sentence of this section would imply that such radars are not so useful as standalone systems. More evidence should be given to the reader, maybe using some figures, to support considerations about devising system's parameters. I suggest that quantification of sensitivity, in relation to peak power, pulse and beam width should

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be provided and presented in graphical form to support a discussion that would result more generic and not limited to the use with KAZR or MIRA 35 (Table 1). A couple of minor issues: Concerning the transmitter, we guess from the reference provided that a klystron transmitter will be used. Can other solutions be used? Caption of Table 1 says that pulse compression can be used. Are there disadvantages related to this technique at G band? Finally, the final sentence of the section ("The larger attenuation .....") is a bit vague while attenuation would deserve more attention.

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Interactive comment on Atmos. Meas. Tech. Discuss., 7, 321, 2014.