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Comment

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

**A. Battaglia et al.**

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Here below a point-to-point response to reviewer 3.

1. It is not fully clear what the reviewer means with this comment and specifically with the word 'requirements'. Frankly speaking we do not have a technology ready to go and 'looking for a home'. Certainly we have been liaising with industrial partners in order to understand the technological challenges related to G-band radars. We have listed some basic technical requirements in Tab.1 and discussed them in Sect.4. Such specifics are essentially driven by the requirement of achieving detectability of the cloud types corresponding to the scientific gaps we have identified in Sect.2 and of optimally combining the G-band system

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with the  $K_a$  radar.

2. A G-band radars could be potentially useful also from space and indeed they have been already proposed for characterizing cirrus clouds (e.g. Hogan and Illingworth, 1999). However most of the applications proposed in this work require Doppler spectra. In LEO satellites the fast satellite motion produces a large Doppler fading which strongly reduces the potential of multi-frequency Doppler spectra techniques.
3. When discussing "match beams and volumes" we always refer to single matched beams and volumes like it is currently done for the  $K_a$  and W-SACR systems at the ARM sites.
4. In sect.4 we have indeed abused of the adverb 'properly'. We will revise it properly in the revision.

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

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