

## ***Interactive comment on “Vertical Air Motion Retrievals in Deep Convective Clouds using the ARM Scanning Radar Network in Oklahoma during MC3E” by Kirk W. North et al.***

**Anonymous Referee #4**

Received and published: 14 October 2016

The paper has a thorough introduction explaining the importance and current understanding and well presented graphics. The paper answers many questions I initially would ask – e.g. the attenuation issues and need for S-band in these cases. I appreciated the descriptions of the cases in section 5.2. However I feel there are some “holes” that need to be filled for publication. - Page 4 – the calibration and processing is essentially stated as standard, yet these practices are certainly far from universal and require more detail on what calibration, processing and quality control has occurred. - Equation 1 requires weights, which are subsequently mentioned, but the chosen values are never given – for repeatability they are important. - I found section 3 hard to follow, some symbols seem unspecified (at least until later) or inconsistent (notably

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don't match the plots) which is I believe the source of my initial difficulty. - the beginning of section 7 suggests “X-, C-, and S-band scanning radars have been used together to pseudo simultaneously”, yet the S-band seems only used for reflectivity in the case where attenuation is thought to be significant, and it isn't clear if it is used at all in other cases. - I'd like to see the S-band radar in table 2 if it is intended to be used together as in the previous point.

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-269, 2016.

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