Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2016-320-RC2, 2016

Atmospheric Measurement Techniques Discussions
Open Access
EGU

Interactive comment on "VHF antenna pattern characterization by the observation of meteor head echoes" *by* Toralf Renkwitz et al.

Anonymous Referee #2

Received and published: 4 November 2016

The manuscript presents a clever and original idea to map the Middle Atmosphere Alomar Radar SYstem (MAARSY) radiation pattern using thousands of meteor head echo events detected continuously over a little over a year. The technique uses the occurrence frequency of these events per location within the radar beam that is estimated using MAARSY's interferometric capabilities. The manuscript is clear and overall well written and I recommend its acceptance after addressing the minor comments listed below. Specific comments:

1) The authors should include more details in the methodology and experiment section regarding the measurements. First this is a paper for the 'Atmospheric Measurement Techniques' journal but yet no much detail on the measured target is given. Secondly, not every reader of this journal is familiar with the specifics of meteor head echo observations. They should add a figure of one of these events overlapped with the radar

Printer-friendly version

Discussion paper

beam cross section, specifying what they mean by 'points' (I assume they mean Inter Pulse Period detections). Perhaps also compare it with the detection of a specular trail showing how this is located at one point only and not suitable for the work they are presenting here.

2) In the paragraph starting in line 10, the authors should provide altitude ranges when they introduce the troposphere/lower stratosphere and mesosphere regions.

3) The first sentence in section 1.1 states: 'The MAARSY radar is one of the few radar systems that are capable of routinely observing meteor head echoes as described in Schult et al. (2013)...' This depends on what the authors mean by 'routinely'. To the best of my knowledge, MAARSY is the only system capable of doing this. Other long-term observing campaigns were performed by the Arecibo, Jicamarca and MU radars. However, those were monthly at best and a one time deal only. MAARSY is performing these observations daily! I suggest removing the 'one of the few' statements or if I am wrong, state which other systems are capable of doing this.

4) Line 25 in Section 2. The expression 'got inoperable' needs to be changed as it is not correct English. I suggest something like 'weren't operational'

5) Section 2.2. Changes 'This inoperability is valid for transmission...' for 'This inoperability affected (or affects) the transmission...'

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-320, 2016.

Printer-friendly version

Discussion paper