

Interactive comment on “Wuhan MST radar: Technical features and Validation of wind observations” by Lei Qiao et al.

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General Comments:

This paper mainly describes the Wuhan MST radar system and verifies its observation results. I have read two published articles about the Wuhan MST radar, they are [Chen G. et al. 2016; Zhengyu, Z., et al. 2013]. I have tried to find some new information in this manuscript, but I really didn't find any new information that can meet the standards of an AMT publication. It is undeniable that the authors have done a lot of work, such as the system description looks very detailed, and used a variety of data to compare and verify with the observation results. However, this article is more like the instruction manual of the Wuhan MST. It contains a lot of content, but most of it is not clear and

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there are many inaccuracies in this paper.

Specific Comments:

Fig.1-5: I think Chen et al. (2016) have made it clear, and it is also simple and easy to understand. The authors just repeated it in disguise, adding photos of some modules. Regarding this comment, I look forward to the authors' explanation.

Fig.6-7: Too foundational.

Line 266-269, Fig.8: Now that the authors indicate that the winds in the mesosphere are only available during the daytime, then why not separate the day- and night-time to get the data acquisition rate of the high mode. I strongly advised the authors to read more related literature about mesospheric echo.

Line 270-271: The maximum data acquisition rate of only 10-17% (between 68-82km region) is not enough to drawing conclusions that the Wuhan MST radar can effectively receive mesospheric echoes.

Fig.9: Why is the comparison result for only one case profile given? Only one profile comparison cannot even be expressed as short term comparison (Line 20). If the authors' intention is to verify the radar observations, a long-term comparison is necessary (maybe two years like Fig.10).

Fig.11: Now that the authors used the meteor radar observation data for comparison, that is to say, the authors recognizes the reliability of the meteor radar data, so why not make a longer time comparison (like Figure 10 and Figure 12)? This is also necessary, both in terms of scientific rigor and the authors' own research purpose.

References:

Chen G., et al., MST Radars of Chinese Meridian Project: System Description and Atmospheric Wind Measurement. IEEE Transactions on Geoscience and Remote Sensing, 2016, 54(8): 4513-4523.

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Zhengyu, Z., et al., Wuhan Atmosphere Radio Exploration (WARE) radar: System design and online winds measurements, *Radio Sci.*, 2013, 48, 326–333, doi:10.1002/rds.20040.

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