

Second review on manuscript amt-2020-353, entitled

Error analyses of a multistatic meteor radar system to obtain a 3-dimensional spatial resolution distribution

By W. Zhong, X. Xue, et al.

Submitted to Atmospheric Measurements Techniques (AMT).

The authors have addressed all the points raised by this reviewer during the first review. I appreciate this very much. I think that the manuscript has improved significantly. The main results are now better discussed, and presented in clear and easy-to-read figures. Besides, other error sources are mentioned, and now it is clear that the errors due to scattering from several Fresnel zones are considered in the a priori phase difference error terms. I have only two minor concerns that should be considered before this paper can be accepted for publication.

In the first place, I am wondering if the size of the sampling grid used to do the error analysis is the proper one. 5 x 5 km in the horizontal plane seems a bit small to have good statistics in order to obtain reliable estimates of the location errors (lines 298-301 in the tracked changes file).

Second, the English writing is still not good for a prestigious journal like AMT. I mean this with all due respect, but it happened many times that I thought I was reading a telegram. There is no coherence among many sentences. Punctuation marks are missing or sometimes they are not used properly. Countless “the” articles are missing. At one point, I just stopped correcting all these mistakes, so I will only provide some examples.

The following examples apply to the line numbering that corresponds to the tracked changes file.

Line 29: change to “... detected by meteor radars, regardless of **the** weather conditions”.

Line 31: change to “Most modern meteor radars are monostatic.”

Line 39: “**look viewing** direction”

Lines 53: instead of “and measurements of the non-homogenous wind fields”, I suggest to write something like “and sampling the observed area from different viewing angles”.

Line 59: it is better to say that multistatic meteor radars have “several” or “a few” advantages over monostatic ones, rather than “many”.

Lines 67-68: what do the authors mean with “are described in the references in these papers”?

Line 69: I think the authors wanted to say “areas of interest” and not “interested areas”.

Line 89: “... influence on spatial resolution distribution due to ignore the discussion of radial distance measuring error” - I think the authors mean something like “... influence on **the** spatial resolution distribution **because it** ignores the ~~discussion of~~ radial distance measuring error.”

Line 105: "... one is those that caused by the zenith angle measuring error..." This does not make sense.

Line 106: "... and another is those that caused by the pulse length effect..." Again, this is incorrect English writing.

Line 108: "... passes through..."

Line 112: "... meteor event meanwhile..." should be changed to "... meteor event, meaning..."

Line 118: "in plan view"?

Line 165: "... by rotating clockwise in order of ..." Did the authors mean "rotating orderly"?

Line 290: What does "... points to east by north 60°" really mean? And why 60°?

Line 300: change to "... with equal probability..."

As I wrote before, these are just some examples. There is an English native speaker among the authors of this manuscript. I strongly recommend that he reads the paper thoroughly and applies the needed corrections and improvements.