

Atmos. Chem. Phys. Discuss., referee comment RC1  
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## Review of acp-2021-33

Anonymous Referee #1

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Referee comment on "Climatology of migrating and non-migrating tides observed by three meteor radars in the southern equatorial region" by Jianyuan Wang et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-33-RC1>, 2021

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The study is well performed, and the article is clearly written. I think ground-based remote sensing of MLT tides is important though the authors did not explain why the ground-based tidal measurements are complementary to satellite observations. They should add a paragraph about this topic in order to enhance the significance of their study which is well suited for a publication in ACP.

Minor comments:

abstract

page 2, line 13 ... could be well fitted by the radars ....

This sounds strange. I would suggest: ... could be well observed by the radars ...

page 2, line 14 unclear formulation:.... might be overestimated

overestimated by the model or by the observations?

what is the reason for the overestimation? The data analysis?

page 2, line 18 unclear: ... slightly different ...

is it again an underestimation of the amplitudes by the model ?

page 3 , line 13 : ... to fit migrating and ...

I think „fit“ is the wrong formulation since the observations are not fitted to the sine waves. The sine waves are fitted to the observations! Here I would write:

... to derive migrating and ...

page 3, line 20 ... also demonstrated ...

better: ... also derived ....

page 3 Introduction: I am missing 1-2 sentences about the complementarity of tidal measurements from ground and space Why are ground-based observations necessary?

page 7 line 15 ... zonal wavenumber greater than or equal to two cannot be considered ...

How can you derive SW2, DE3 and SE2 which have wavenumbers greater equal 2?

page 11 line 28 The CTMT is a 2-dimensional model ....

By the way it seems to be three dimensional (time, height, latitude)

Section 4 is quite long and covering different topics. I would make 2-3 subsections so that the structure of the discussion becomes more visible