

# ***Interactive comment on “Semi-Annual Variation of Excited Hydroxyl Emission at Mid-Latitudes” by Mykhaylo Grygalashvly et al.***

**Mykhaylo Grygalashvly et al.**

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Response to the comments on the paper by Referee 2 Semi-Annual Variation of Excited Hydroxyl Emission at Mid-Latitudes By Mykhaylo Grygalashvly, Alexander I. Pogoreltsev, Alexey B., Andreyev, Sergei P. Smyshlyaev, and Gerd R. Sonnemann

Dear Referee,

We appreciate positive judgment on our paper, constructive comments, and not formal approach to the review. We have taken your suggestions into account when preparing the revised version of our manuscript. In following we mention point by point how the manuscript has been changed according to your suggestions.

1. We add it at line 93 of the revised manuscript.

2. We add the explanation at lines 113-115 of the revised manuscript.
3. We add such description at lines 136-141 of the revised manuscript, as well necessary references in the reference list.
4. We add such a comment at lines 133-135.
5. We add such notation at lines 159-162.
6. We add such statements at lines 156-157.
7. Following by your suggestion we add Eq. (A6) into the Section 3 with explanations about mean states and perturbations, as well we modified the description of the Fig.
3. We did not add the equation (A7) because second momentum have not essential impact on volume emission variability and in future investigations their consideration could be omitted.

Technical comments:

Line 86. This technical but very large problem was comprehensively described in large number of works of Lopez-Gonzalez, which we refer in our reference list.

Part 2.2. Following by your suggestion, we collected description of coefficients for Eq. (1) in the Table (1).

Line 600. Thank you for this note, it is true. We corrected the description of the Fig. 1. Figures 2 and 3. We changed the time scale of these figures according with your suggestion.

Line 83. We change this nomenclature according with common nomenclature of our manuscript.

All of your language and stile corrections at lines 167, 171, 179, 200, 232, and 249-250 were applied completely.

Other changes are related to the recommendations and demands of other referee.

Interactive comment

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Thank you for taking the time to review our manuscript.

With respect, Mykhaylo Grygalashvly, Alexander Pogoreltsev, Alexey Andreyev, Sergei Smyshlyayev, and Gerd Reinhold Sonnemann

**ANGEOD**

Please also note the supplement to this comment:

<https://angeo.copernicus.org/preprints/angeo-2020-80/angeo-2020-80-AC2-supplement.pdf>

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Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2020-80>, 2020.

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