

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

Anonymous Referee #1

Received and published: 1 January 2021

In this paper, the annual dynamics of OH* emission at middle latitudes is analyzed, focusing on the causes of semi-annual cycle with maxima in summer and winter which have been revealed during previous long-term ground-based observations. First, the authors found a similar behavior of OH* emission in simulation data which were obtained with the use of the well tested 3-D chemical transport model of the middle atmosphere. Second, they developed a mathematical approach to analyze the causes driving the temporal evolution of OH* emission. Third, they found with the use of this approach that the observed features of the semi-annual cycle of OH* emission were caused mainly by the superposition of annual variations of temperature and O concentration at middle latitudes. The results obtained are interesting and therefore the paper merits publication. I have minor remarks only. 1. The authors analyze the simulation

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data corresponding to year 2009. In what year or years were the experimental data shown in Figures 1 measured? 2. Tick labels (months) of all panels on Figs 2-3 have merged and are difficult to distinguish.

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

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