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Interactive
comment

Interactive comment on "Propagation to the upper atmosphere of acoustic-gravity waves from atmospheric fronts in the Moscow region" *by* Yuliya Kurdyaeva et al.

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Thanks for the very valuable comments. The manuscript is devoted to the study of the influence of acoustic-gravity waves (AGWs) from a moving atmospheric front on the state of the upper atmosphere. While in the work (Kurdyaeva et al. (2018)) the mathematical formulation of the problem on the propagation of waves from pressure variations at the lower boundary is investigated (the problem correctness is investigated) and the results of test calculations are given. The work (Kurdyaeva et al. (2018)) is not tied to any specific event in the atmosphere, it is essentially a mathematical work. In the present work, estimates of the amplitude of temperature disturbances in the upper

atmosphere caused by acoustic-gravity waves from the atmospheric front are given. This evaluation is performed for the first time.

Line 29, page 2: 10-4 must be replaced by 10ˆ4. It's corrected.

Line 31, page 2: This data is not publicly available.

Line 6, page 3: The change in atmospheric pressure can be associated with the activity of meteorological sources. However, it is impossible to completely exclude the effects on the wave pattern in the upper atmosphere of other wave sources unrelated to the meteorological events under consideration, for example, of sources of oscillations that are anthropogenic in nature. The study of wave propagation from the observed extreme pressure fluctuations allows hoping that the possible undesirable for our purposes influence of various other wave sources on the wave pattern is leveled.

Lines 10, 11, page 5: Yes, the Coriolis force terms can be ignored. It's correccted, these terms are omitted.

Line 28, page 7: T is temperature

Line 4, page 7: The dimensions of the considered areas in the horizontal dimension differ by 30%. The difference is not so great, but a more significant difference in the regions sizes s greatly increases the simulation time, because the dependence of the simulation time on the horizontal region scale is quadratic. At the same time, this difference between regions is significant, which is noticeable at large times, and that allows to notice that at not very long times, the wave picture and the main characteristics of the wave process weakly depend on the area size.

Capture of fig.4 and fig.5: Thank you. Indeed, there should be "The plane y = 0 of cross section ..." It's correxted.

Line 10, page 9: It's correxted.

Line 15, page 9: We believe that we just need to replace the "the" before the word

domain with the "a" and the sentence content will become clear.

Also, I strongly recommend to the authors somehow to improve English before publication (may be to show the text to any professional translator).

Thanks for the advice. We will do that.

The authors.

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