

Referee comment: "Benchmarking microbarom radiation and propagation model against infrasound recordings: a vespagram-based approach" (Vorobeva et al.)

General comments:

I thank the authors for responding to all comments adequately. The authors have done a great job in revising their manuscript. They enhanced the figures (particularly 2, 3, and 6) and rearranged parts of the manuscript, so the presentation of the methods and results is improved. Also, the concluding discussion is more comprehensive now. These improvements have strengthened my opinion that this manuscript, which presents a novel method for infrasound data analysis, will be a significant contribution to the infrasound community.

Therefore the manuscript can be accepted for publication in *Annales Geophysicae* subject to minor revisions. Please find specific comments and technical suggestions in the attachment.

Specific comments (line number refer to the cleaned version)

- 1) L. 166: "a more accurate simulation" – compared to what? (semi-empirical attenuation law, I guess, but this is mentioned in the next sentence)
- 2) L. 173: I suggest to add "... (HRES) model [analysis]..." in order clarify that neither a reanalysis nor a HRES forecast is used here; also in L. 175: "... ECMWF HRES [analysis] is 6 h"
- 3) L. 176, rather just a remark: a discrepancy can also be caused by the assumption of constant wind/temperature over 6 hours.
- 4) L. 202: "not so stable" – in which sense? direction?
- 5) Figs. 2, 3: b)-d) add the unit Pascal to the colorbar, f)-g) same colorbar as in e)?
- 6) L. 240/241: How much greater? (distances of ~8000 km?)
- 7) L. 293: only "from reanalysis data"? (according to my understanding, you do not use reanalysis data in your study), maybe you can write "from (re-)analysis data"
- 8) Fig. 6: This figure is nice, better than before! I suggest adding one colorbar (for the vespa) and changing the backazimuth to 0-360° (as you did in the text).

Technical corrections (line number refer to the cleaned version)

- L. 127: wavefront -> wave front (as elsewhere in the manuscript)
- L. 148: You start three subsequent sentences with "This ..." The second sentence could be rephrased, e.g.: "Here, we use ..." (or passive mode)
- L. 168/169: "this law" (2x)
- L. 177: "... is [an] acoustic spectra attenuated ..."
- L. 182: "on how realistic [a] spectrum is needed for..." (?)
- L. 198: a difference -> differences
- L. 221-222: "accompanied by the semi-empirical wave attenuation law" – here, I recommend using "combined with" or "complemented by" as you use "accompanied by" a few sentences earlier in a completely different context (where it fits better in my opinion)

- L. 223: "... between day[s] 200 and 210, [when] the modelled amplitude [is] much lower ..."
- L. 234/235, rephrase: "However, the maximum power is sometimes also observed from north-easterly and south-easterly directions in summer".
- L. 247: "... and has values [close to] one, ..."
- Fig. 5 caption, suggestion for better readability: "day 1 – 00 UTC, day 4 – 00 UTC, etc."
- Fig. 5: "depending on [the] year"
- L. 301: "[does] not always characterize"
- L. 303: difference[s]
- L. 323/333: disturbances instead of irregularities?