

Interactive comment on “Microbarom radiation and propagation model assessment using infrasound recordings: a vespagram-based approach” by Ekaterina Vorobeva et al.

Anonymous Referee #2

Received and published: 7 January 2021

This study presents a novel method for analyzing infrasound data, the vespagram approach. The authors apply this method to 6 years of data recorded at the Norwegian array IS37 to extract microbarom arrivals. The latter are compared with simulations using a recently developed microbarom model. For comparison, the similarity index is introduced, which is based on mean-squared errors. While the manuscript title partly raises expectations on conclusions about the microbarom model performance, the manuscript essentially evaluates the vespagram approach as a method to utilize infrasound for stratospheric diagnostics. Due to its capability to scan all directions simultaneously, the advantage of this novel approach is obvious. The manuscript is generally well written and organized, but the presentation and discussion of the results need to be

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enhanced. In particular, Section 3.1 confronts the reader with three extensive figures within a few sentences while remaining sparse with explaining and discussing details (e.g., on remarkable features, outliers) of these figures. For instance, Figure 4 is only once briefly referred to. My specific comments indicate several features that could or should be further discussed (e.g., Figs. 2 and 3). Given the number of comments and questions, I request a major revision, rather than a minor. Once the authors have addressed these comments and questions, this study will be an important contribution and thus certainly worthy of publication in *Annales Geophysicae*.

The specific comments and questions, and a few technical suggestions, are included in the supplement.

Please also note the supplement to this comment:

<https://angeo.copernicus.org/preprints/angeo-2020-78/angeo-2020-78-RC2-supplement.pdf>

Interactive comment on *Ann. Geophys. Discuss.*, <https://doi.org/10.5194/angeo-2020-78>, 2020.

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