

Interactive comment on “Global fungal spore emissions, review and synthesis of literature data” by T. N. Dallafior and A. Sesartic

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We would like to thank referee 2 for the helpful comments and careful evaluation of the manuscript. The referee's comments and our responses follow.

Specific comments

Data coverage and flux estimation: We agree with referee 2 that available data are very scarce. However, it is important to point that out to other researchers. We hope that our review will motivate further observations of fungal spore emissions, which might ultimately lead to an improved global database. Additionally, our review was done in order to have preliminary observational data which would enable first tentative modelling of fungal spores acting as ice nuclei in a global climate model (paper in C5459

preparation, see also technical comment).

Biome definition: According to the referee's suggestions, we split up the forest flux data into separate fluxes for tropical and other forests.

Flux estimation: According to the referee's suggestions, equation one is now rewritten and explained in further detail as are the variables used therein. As we write in Chapter 3.1 (p. 8458) of our manuscript, the diurnal and seasonal cycles of fungal spores were neglected for simplification and due to insufficient data availability, which does not allow for an extension to all biomes and species. Therefore, only annual mean values were taken into account.

Technical comment

As mentioned in chapter 2, the offline calculation was only used in order to plot a map of global fungal spore emissions. There is no "flux model" existing per se. However, we use the data gathered in this review as input for the global climate model ECHAM5-HAM (publication in preparation) where we simulate the emission and transport of fungal spores, and investigate their role as ice nuclei and the subsequent effects they might have on clouds and precipitation. In order to allow an approximation to seasonal variability, the static fungal spore emissions are coupled to a seasonally changing percentage of biome coverage per gridbox.

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