

## ***Interactive comment on “Microbiology and atmospheric processes: chemical interactions of Primary Biological Aerosols” by L. Deguillaume et al.***

**L. Deguillaume et al.**

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We thank **Referee 2** for constructive comments and suggestions, which are highly appreciated and have been taken into account in the revised manuscript. Detailed answers are given below, first focussing on a couple of general aspects (sections structure and recommendations for the future) and then on specific comments.

### **- General aspects:**

*"However, the non specialist is often left clueless in view of the abundance of information. It would help the reader if the authors more clearly structured the processes and ranked them according to their significance."*

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We agree with the reviewer that the description of the numerous PBA processes in the paper was not clearly structured. This has been improved with rewriting sections 2 and 3. Moreover, it is difficult to rank the processes according to their significance since most of them are still not quantified.

*"The discussion is largely limited to a subset of bioaerosol, namely to fungal spores and bacteria, a limitation which should be mentioned in the Abstract."*

We have clarified in the abstract that the discussion in the paper is mainly limited to fungal spores and bacteria with the following sentence: "Moreover, airborne microorganisms, namely fungal spores and bacteria, can transform chemical constituents of the atmosphere by metabolic activity".

*"The suggestions for future research include recommendations for the use of regional and global models of the atmosphere. I think, at this stage of research it might be more urgent to compile measurements and to achieve comparability with the different measurement techniques applied by different communities. This might accelerate progress in this new field more rapidly than application of coarse resolving numerical models."*

Section 5 ("Research perspectives and suggestions for future studies") now better explain priorities to study PBA: (1) Monitoring of PBA and laboratory experiments (short-term); (2) Determination of biological mechanisms and kinetics by the way of laboratory investigations (short- and mid-term); (3) Process models for comparison of biological processes with the multiphase processes (mid-term); (4) Transport and dispersion of PBA with 3D model (long-term).

**- Minor comments are answered below:**

- p 843 In 11: "outlines" is misspelled.

We replaced "oulines" by "outlines".

- Phrases like "have a strong influence" (p846ln12) or "play a major role" (p850ln9) without explaining which influence or which role is meant, are not very informative.

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These sentences have been rewritten in a better informative way or suppressed in the revised manuscript.

- *Please, replace in Figure 1 the French "particules" by "particles".*

The French word "particules" has been replaced in Figure 1 by "aerosols" for more consistency.

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Interactive comment on Biogeosciences Discuss., 5, 841, 2008.

**BGD**

5, S310–S312, 2008

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