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Interactive comment on “Microbiology and atmospheric processes: biological, physical and chemical characterization of aerosol particles” by D. G. Georgakopoulos et al.

Anonymous Referee #2

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As mentioned in this article, traditionally bioaerosol research is mainly focused on health effects. This paper has brought up the possible roles of bioaerosols in climate change and relevant chemical processes in the atmosphere. This area of study sounds very interesting to bioaerosol scientists. However, the progress in bioaerosol research itself significantly lags behind other disciplines due to the limited number of scientists. Realtime detection of bioaerosol with a time limit of less than 1 min is still a big challenge.

This article has compiled existing technologies that have been used in detecting and analyzing biological agents. The information provided in this article may serve a gen-

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eral guide for scientists interested in bioaerosol field. One thing, I would like to mention, is that the bio-sampling is the first step, yet a challenging task, for the subsequent biological analysis. The discussion in this area seems lacking in this article. A high volume aerosol-to-hydrosol sampling techniques with low cutoff size is a key step for this purpose. Besides, in the Introduction part, more references might be needed to support the statements.

The title "Microbiology and atmospheric processes: biological, physical and chemical characterization of aerosol particles" does not reflect the content, no atmospheric process was discussed and the only role of microbiology in the atmospheric processes mentioned in this manuscript was ice nucleation. The content of the manuscript is more a summary of characterization technologies than a review on atmospheric processes. I would like to suggest change to title to "Technologies for biological, physical and chemical characterization of aerosol particles".

technical corrections: Page 1487, line 3, change to "if there are very few target molecules";

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