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Interactive comment on “Composition of microbial communities in aerosol, snow and ice samples from remote glaciated areas (Antarctica, Alps, Andes)” by J. Elster et al.

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Received and published: 4 September 2007

Dear Dr. Elster,

In view of the comments of the two reviewers I believe there are too many uncertainties in your manuscript to accept its publication in Biogeosciences. I would like to draw your particular attention on two aspects of the paper that need further work. First, I strongly doubt that the abundant “unusual prokaryote” shown in Fig. 1 (a,b,c) is in fact an organism at all. It is much more likely to be glacial flour, or very fine sand transported over long distances. Another alternative is that these are undissolved iodine crystals. Fig. 1d of the cultured media might indeed be a prokaryote but its relationship with the

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original sample are lacking. I believe the burden of proof that these truly are micro-organisms falls on you and this would require, minimally, electronic microscopy of thin sections to safely convince the reader.

My second major concern relates to the statistical analyses performed. First, the sample size (13) is very small. Second, it makes little sense to me that a PCA can be done on presence/absence data, it should be continuous data. Perhaps it is just a question of semantics and the authors meant correspondance analysis (CA). If a PCA was indeed done, the results will be strongly biased because of the number of zeros. Was it done on the correlation or covariance matrix? Also, how were the tests done to distinguish between, for example, aerosol, snow and ice? Was a dummy variable introduced in the analysis? This information is important to assess what was actually tested and to properly interpret the results.

On the basis of the comments from the reviewers and those outlined above, I regret that the paper is not considered acceptable for publication in biogeosciences.

Interactive comment on Biogeosciences Discuss., 4, 1779, 2007.

BGD

4, S1313–S1314, 2007

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