

***Interactive comment on* “Bacterial diversity in Himalayan glacial ice and its relationship to dust” by S. Zhang et al.**

Anonymous Referee #2

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COMMENTS ON THE PAPER TITLED “BACTERIAL DIVERSITY IN HIMALAYAN
GLACIAL ICE AND ITS RELATIONSHIP TO DUST” SUBMITTED BY ZHANG ET AL.
TO BIOGEOSCIENCES

GENERAL COMMENTS In my opinion the above paper addresses a relevant scientific question within the scope of Biogeosciences. The main focus of the paper is on bacterial diversity in Himalayan glacial ice and its correlation with dust particles. The paper based on the studies carried out on evaluation of bacterial community by DGGE, cell counts and dust particles analysis conclude that bacterial community diversity rather than concentrations may be suitable parameter for the reconstruction of the best climatic and environmental changes. The conclusions drawn are relevant and convincing.

SPECIFIC COMMENTS 1. The main focus of the paper is on bacterial diversity, DGGE by itself can definitely provide subjective information on changes in bacterial diversity. But if this information is to be used effectively by microbiologists, it would be essential also to clarify what are the different types of microorganisms present at the various depths. At least those microorganisms which are dominating and predominant at each depth could be identified by PCR and sequencing of the DGGE bands. **2.** Fig. 2, change “13 among the 50 samples in gray” to “13 gray samples”. **3.** Legend to Fig. 3, details of each lane should be given. If possible the unique bands at each depth should also be indicated. **4.** Fig. 6 is not needed and the results could be included in the text. **5.** Fig. 8 also is not needed and the results could be included in the text. **6.** A few typographical errors have been noticed allthrough the text. For instance, Page 3434, line 20, “presented” should be “present”. **7.** Page 3436, line 3, “was drilled to the bedrock on the col” should be “was drilled through the bedrock on the col”. **8.** What is “col”? **9.** Why have the investigators used only a small part of the 16S rRNA gene for their diversity studies. They should have normally used atleast a 1 Kb fragment for this purpose. **10.** “ μ L” should be changed to “ μ l” all through the text. Further “ μ ” need not be in italics. **11.** Page 3440, “nightly exposure” is not the right expression. It should be changed.

The paper needs to be revised following which it could be accepted.

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Interactive comment on Biogeosciences Discuss., 5, 3433, 2008.

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