

Interactive comment on “Activity and diversity of methane-oxidizing bacteria in glacier forefields on siliceous and calcareous bedrock” by P. A. Nauer et al.

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Author: Nauer PA et al. Title: Activity and diversity of methane-oxidizing bacteria in glacier forefields on siliceous and calcareous bedrock

The study examines methane-oxidizing bacteria in new exposed sites in the Swiss Alps. Methane oxidizers are very interesting critters, and we still have lots to learn about their identity, activity, and ecology. Thus, the study has high scientific merit.

The study is well designed, has quite thorough sampling and analyses, and the paper

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is well written. I have only a few comments and suggestions to improve the clarity of the presentation.

The abstract is fine.

You might consider a bit of reorganization in the introduction section. I found it confusing when you jump among high-affinity and low-affinity oxidizers in the same paragraph. It might help readers to have one paragraph devoted to the low-affinity group, justifying what is known and not known. After that start a new paragraph and justify studying the high affinity group.

Also in the introduction section you should justify studying site derived from siliceous and calcareous parent material, i.e., elaborate on the sentence on page 1263, line 27. I agree the distinction among sites is interesting, I doubt that a reader would expect differences based on the lack of justification. Try to provide a testable hypothesis, or at least a question in the introduction section.

The results are presented clearly. However: 1) The notation for ‘Sampling dates in 2010’ in Table 1 is not clear to me. 2) I suppose the range of values presented in Table 2 is okay. However, this merely shows variation in soil properties. Consider presenting the median value for each site in order to compare among sites. 3) The use of +/- is a bit confusing in Table 3. Consider using parentheses for the S.D. values. 4) Delete the comma after ‘reported’ in the legend in Table 3. The sentence is confusing as written. 5) Page 1271, line 23: consider stating explicitly that organic carbon was below detection.

In the discussion section: 1) Page 1275, line 24: are the data in Table different than data in the referenced papers? They appear to be different; however, I did not read each paper carefully. 2) I like figure 5: very helpful! 3) Page 1277, line 15: you should mention buried organic matter in the introduction section.

The number of references is okay.

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