

Interactive comment on “Linking the distribution of microbial deposits from the Great Salt Lake (Utah, USA) to tectonic and climatic processes” by A. Bouton et al.

Anonymous Referee #4

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In this manuscript, the authors analyzed patterns of microbial deposits in Great Salt Lake and set those in relation to potential shaping factors influencing the formation of those patterns, such as climatic and tectonic factors. The introduction provides a good overview of the topic and the state of knowledge, citing relevant literature. The visualization of the described structures with graphs and images is excellent. However, there are several points regarding the presentation and discussion of results that the authors should pay attention to: (i) The research objectives given are very short and general and should be made more specific. What did the authors expect to find? What is their contribution to the state of knowledge in this area of research? (ii) All the descriptions listed in section 3 appear to be own findings of the authors, however, as far as I can

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see there is no information about the methods used to obtain these results. Even if this section mainly contains geological and mineralogical descriptions of the different strata and deposits, some basic information about how samples were taken and analyzed would be desirable. If the authors here also build on already existing knowledge published by other authors, this should be pointed out more clearly. In general, the structure is not clear to me. Why is section 4 divided in methods and results and the other sections are not? (iii) In general, the combined results and discussion section appears rather lengthy and should be written more concisely. Each section is focusing on a different aspect, however, the same factors and phenomena are mentioned again in each section. Here, the most relevant factors should be pointed out more clearly and strongly. Among all the information given, it is often difficult to pick the relevant points that make this study different from previous studies (at other sites). What are the main findings of the authors, and how do their findings contribute to our current understanding of the described processes, going beyond Great Salt Lake? p. 13, l. 22-30: These are strong points and should already be more visible in the preceding sections to highlight more strongly how the integration of these new tools enabled the authors to make a particular finding.

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