

Biogeosciences Discuss., referee comment RC2  
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## Comment on bg-2021-103

Anonymous Referee #2

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Referee comment on "The biogeographic pattern of microbial communities inhabiting terrestrial mud volcanoes across the Eurasian continent" by Tzu-Hsuan Tu et al.,  
Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-103-RC2>, 2021

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This is very interesting and well prepared manuscript. The authors investigated the diversity and composition of microbial communities in the terrestrial mud volcanoes, this is very helpful to enrich our knowledge of the region. However, in terms of analysis methods and expressions in some results, I think there are still shortcomings. The specific opinions are as follows:

- The stochastic process mentioned in the title is one of the two important processes in community assembly. Why is it only proved by DDR and HAR? Is there any other evidence, such as the use of  $\beta$ NTI and NST (Normalized stochasticity ratio).
  
- The article has sequenced the prokaryotic communities, including bacteria and archaea, but why didn't the bacteria and archaea communities be analyzed separately during the analysis? Because the physiological and biochemical characteristics of the two are very different.

## Abstract

- Line 25: This sentence has no real meaning, please omit or revised.

## Introduction

- Line 74: I may have missed this, but where the specific colonists you defined are mentioned?

## Materials and Methods

- Line 96-99: Please add the specific parameters used in the sequence data analysis.
- Line 103: As far as I know, only dada2 and deblur softwares can achieve 100% clustering and get the ASV, but you use mothur, how is it achieved?
- Line 118: What is the parameter  $\alpha$  meaning?

## Results

- Line 177: I cannot draw the conclusion from Figure 3f that the most widely distributed ASV were presented in 9 MVs. In addition, the information expressed in the Figure 3 is not fully explained in the text, please revised.

Line 219: The result of Mantel test is negative, is this correct?