

## Comment on bg-2021-165

Anonymous Referee #2

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Referee comment on "Composition and niche-specific characteristics of microbial consortia colonizing Marsberg copper mine in the Rhenish Massif" by Sania Arif et al.,  
Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-165-RC2>, 2021

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This study characterized the soil microbial diversity and metabolic potentials in the Kilianstollen Marsberg, a copper mining area in German. I have several concerns about this manuscript:

- This study is just region research, how to attract global interests? Is there any implications for the other mining sites? Authors should highlight its "unique" in the Introduction.
- Plz highlight the hypothesis. What is the scientific question in this study?
- Plz move the details of PCR to supporting information.
- Just recommendation (Line 160): ASV is more widely acceptable than OTU.
- Line 190: Provide the detail parameters for the metaG-analysis, such as what is the k-mer for assembling?
- Line 215 and Line 217: SO4? SO4-?
- Too many colors, plz show the top taxonomies or the most important taxonomies.
- Sample names "MBS MB 1234" is confusing, plz use more readable ID.
- Figure 7 is too complex, plz show the most important information.
- Fig8 and 9: The proposed pathway comes from all MAGs or just one MAG? What is the difference from already reported Copper-resistance pathway?