

Interactive comment on “Role of Microbial Communities in the Weathering and Stalactite Formation in Karst Topography” by Tung-Yi Huang et al.

Anonymous Referee #2

Received and published: 4 April 2019

The paper ‘Role of Microbial Communities in the Weathering and Stalactite Formation in Karst Topography’ attempts to connect microbial metabolic activity to both dissolutional and depositional processes with landscape-scale processes in the evolution of karst. Unfortunately, the manuscript suffered from several major problems, the greatest of which was a complete disregard for the vast body of research on hydrogeological processes in shaping karst. This error was compounded by:

1. The very small number of sample sites
2. A lack of cause-and-effect studies to demonstrate a direct role for microorganisms in the describe processes
3. A lack of understanding of general calcification processes (ureolysis is not the sole mechanism

C1

- of calcification)
4. No description of the source of urea that could drive the putative calcification processes
5. A 95% identity to a ureolytic species has no bearing on whether the identified phylotype is also ureolytic

I would recommend that the authors work with a geologist and/or geomicrobiologist to better understand the processes they are examining, dramatically expand the sample sites being tested, and develop assays that can directly test whether the microbial activities they are examining are tied to the geologic processes they observe.

Interactive comment on Biogeosciences Discuss., <https://doi.org/10.5194/bg-2019-12>, 2019.

C2