

The Cryosphere Discuss., referee comment RC3
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Comment on tc-2021-299

Anonymous Referee #3

Referee comment on "Formation of glacier tables caused by differential ice melting: field observation and modelling" by Marceau Hénot et al., The Cryosphere Discuss., <https://doi.org/10.5194/tc-2021-299-RC3>, 2022

The authors report field measurements and analysis of the formation of glacier tables. The characteristics of four of them were recorded over a few days. The statistics of 80 tables were also collected at a given day. They apply a previous laboratory study (Henot et al., 2021) to build a model with which they can quantitatively reproduce their observations, and in particular the critical rock size below which no table can form (the rock sinks into ice).

This is an interesting work that follows well the previous authors' study. I recommend publication once the following minor concerns are addressed.

1. It would be nice to announce already in the title that this is a work based on field data.

2. The introduction is nice and well documented. To complete the picture of sublimation-induced patterns, it may be interesting to mention also blue ice ripples, observed in Antarctica (Bintanja et al., J. Glaciol., 2001) and more recently on Mars (Bordiec et al, Earth-Science Rev., 2020).

3. Speaking of extra-terrestrial conditions, it would be interesting, to broaden the discussion, to make some predictions associated with planetary environmental conditions. For example, shouldn't we expect these tables to be also present on Mars, and if so what is the expected critical rock size?

4. Single column figures appear too small.

5. Fig. 4a: the y-axis label is Δz , but shouldn't it be H?

6. Wind speed is discussed in different places. Being a profile, it depends on the altitude at which that speed is recorded. Or the authors may refer to the wind shear velocity u_* . Please be more precise.

7. Coefficient h_{eff} : I find this notation a bit misleading as it looks like an effective height, whereas it has the dimension of $W/K/m^2$.