Interactive comment on “Resolving the influence of temperature forcing through heat conduction on rock glacier dynamics: a numerical modelling approach” by Alessandro Cicoira et al.

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First I’d like to apologize for the delay in submitting my comments. Unforeseeable circumstances did not allow me to review the paper earlier.

Cicoira et al. present a well written manuscript on a numerical study of rock glacier creep with the objective of understanding seasonal changes in surface deformation. Overall the manuscript reads well and follows a logical flow. Assumptions and limitations of the model are reasonably explained. I also do, in general, agree with the author’s conclusion. One aspect I’d like to see included is a presentation of the depths of the zero annual amplitude, and a discussion that relates those depths with the limited
success of explaining seasonal changes in deformation via conduction. With temper-
atures being the driver for the creep, no seasonal change in the velocity would be
expected if the temperatures remain constant.

The manuscript could also benefit from some editorial improvements and I made
several suggestions in the annotated version attached to this comment.

Please also note the supplement to this comment:
https://www.the-cryosphere-discuss.net/tc-2018-176/tc-2018-176-RC2-
supplement.pdf