GChronD

Interactive
comment

Interactive comment on "Resolving the timescales of magmatic and hydrothermal processes associated with porphyry deposit formation using zircon U-Pb petrochronology" *by* Simon J. E. Large et al.

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We thank the B. Keller for his constructive and positive comments on our submitted manuscript. We provide answers to the reviewer's main comments below.

1. Stochastical sampling approach to determine emplacement ages

We thank the reviewer for pointing us towards stochastical sampling approach to determine porphyry emplacement ages. We have calculated emplace-ment ages based on this approach using the interactive Jupiter notebook on

https://github.com/brenhinkeller/BayeZirChron.c. We have addressed the results in the discussion (Section 5.5) and have added the emplacement ages to the appendix. Indeed, the different treatments of the CA-ID-TIMS result in overlapping results with little variation. More importantly the durations and timescales remain nearly identical.

2. Discussion TIMS vs. in-situ data

We thank the reviewer for this assessment. Indeed, highlighting the differences in apparent and absolute resolution between in-situ and ID-TIMS geochronology is the main point of the later discussion. We hope to provide a contribution to the scientific literature by providing a data-set where the differences can be investigated from analyses of zircons from the same samples. Thus, we would like to leave the shortened and focussed discussion in the manuscript.

Minor comments were addressed accordingly

Best regards Simon Large et al.

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Interactive comment on Geochronology Discuss., https://doi.org/10.5194/gchron-2020-5, 2020.