

Geochronology Discuss., author comment AC2
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Reply on RC2

Richard F. Ott et al.

Author comment on "Cosmogenic nuclide weathering biases: corrections and potential for denudation and weathering rate measurements" by Richard F. Ott et al., Geochronology Discuss., <https://doi.org/10.5194/gchron-2022-5-AC2>, 2022

We thank the reviewer for the feedback and constructive comments that will improve the manuscript. We agree with the reviewer that including radioactive decay will make the study more widely applicable and will include decay in the revised manuscript and associated codes. The nuclide build-up equations with radioactive decay are harder to follow compared to the no-decay version. We will therefore keep the no-decay equations in the main text and add all equations with decay as a supplement.

We agree with the reviewer that the grain size effects of weathering are interesting and deserve more investigation beyond the scope of this manuscript. We assume that in areas of low denudation rate and high weathering, the grain size bias may be a major source of error. Calculating the magnitude of the bias requires knowledge of the grain size distribution entering the regolith and the grain size distribution within the regolith. Doing so requires observational constraints that, to our knowledge, currently do not exist. However, this suggestion highlights a critical area of future research.

We thank the reviewer for their detailed line-by-line comments and manuscript annotations. These are very helpful and will be incorporated into the manuscript during the revision process.

We will detail our responses to these and other points in our line-by-line responses to both reviewers that will be posted with our revised submission.