

Ketcham and Tamer responses to reviewer for R1 (Edward Sobel)

Reviewer comments:

I have thoroughly read the revised version of Ketcham and Tamer's 'Confined fission track revelation in apatite: how it works and why it matters'. It is still a slow read because I have to think a lot about what is being presented. That is certainly a function of my expertise. However, unlike my reading of the first submission, I almost always understood and appreciated the authors' point. Below I have noted a few places where minor text editing might help the next reader. In general, I was happy with how Ketcham and Tamer addressed the reviewers' comments. In particular, the new figs are quite helpful and the renamed samples are easier to keep track of. I think that this is a really thought-provoking study which forces grey hairs like myself to think hard about how the AFT method works and how it should be taught to new workers. I think that this will be a valuable paper for future workers as well as a motivation for additional studies.

Sincerely,
Edward Sobel

Figs 1, 2, 10a, 15 - please add tic marks on the axes.

Fig. 6 'Semi-track penetration and confined track revelation calculated at time steps of 0.2 s and depth steps of 0.2 885 μm . Lines correspond to relative penetration of semi-tracks and revelation of confined tracks at etching times every second from 1 to 20 s, ' (and text around 205).

I'm sorry, but I am having trouble following this. I don't quite understand what is relative semi-track penetration. Please add a 1 sentence explanation in the caption to help slow readers like me. Same issue for fig. 20.

fig 10 caption - nice fig! It would help if the caption noted that these are pairs of figures for each length - both ends. It took me a moment to figure this out because the lengths in the short etch times are so hard to see. 'when analyst is accepting most tracks found '

Perhaps when analyst accepts most tracks that are found

Fig. 11 caption: 'Contour diagrams of model predictions of unannealed induced fission tracks selected by the analyst for measurement etching the grain mount for 20 seconds. '

something doesn't seem right at the end of this sentence.

107-9 - please note the conditions used for full annealing.

309 - add 'to' forced to minimize

335 add micron after 0.1

Discussion - 1st pp - please cite the relevant figs to make it easier for the reader to look at the data.

378-9 this is 0.04-0.21 microns of additional length per intersection, yes? Please slightly rewrite.

599 please cite fig. 20e here.

609 end of sentence: 2 characters are corrupted on my pdf.

Author responses:

All requested corrections have been made. We made a small number of additional changes to correct a mis-numbered figure reference, and slightly improve the wording in a few places, but none that changed the scientific content.