



MS: gchron-2020-39

The closure temperature(s) of zircon Raman dating

Härtel, B., Jonckheere, R., Wauschkuhn, B., and Ratschbacher, L.

Replies to referee #2 (A. Dias)

We thank the reviewer for his suggestions. We are pleased that the reviewer accepts our data and interpretation. We implemented his suggestions to extend our references and add technical details of the measurement setup. We address the specific comments (in italic) below:

Comment	Reply
<i>I suggest reading the article by Dias et al., 2020 (doi:10.1166/jnn.2020.17172). It is related to the content of this article. It may be an updated reference.</i>	We read the article and integrated relevant information in our Results & Discussion Section.
<i>In the METHODS AND MATERIALS (2.2 RAMAN SPECTROMETRY), the laser used in the experiments is presented: 488 nm - line 64. I would like to know why this laser was used instead of laser regularly applied (514 and 633 nm)? What are the advantages of using laser 488 nm? Finally, I would like to receive more information to justify this choice. I even think that such information should be included in the text (even succinctly).</i>	We used the 488 nm laser to increase the signal-to-noise ratio of our spectra. Since the Raman intensity is proportional to $1/\lambda^4$ of the incident laser light, the 488 nm laser gives higher Raman intensities than a 514 or 633 nm laser, although at lower spectral resolution. Using this laser lowered the acquisition times of our measurements.
<i>All manuscript: change "fission track" by "fission-track"</i>	Done.
<i>Introduction, line 21: remove the word "of". It is unnecessary.</i>	Done.
<i>Introduction, line 47: change "Our aim is" by "We aim".</i>	Done.
<i>Annealing experiments, line 78: change "one hour" by "one-hour".</i>	Done.

<i>Changes in band position and width, line 84: change "is" by "are".</i>	Done.
<i>Changes in band position and width, line 89: insert "a" before "slope".</i>	Done.
<i>Changes in band position and width, line 91: remove the word "the" before "stage". It is unnecessary.</i>	Done.
<i>Changes in band position and width, line 97: remove the word "the" before "stage". It is unnecessary.</i>	Done.
<i>Changes in band position and width, line 104: insert "s" after "stage".</i>	Done.
<i>Changes in band position and width, line 123: remove the word "of" before "the decrease". It is unnecessary.</i>	Done.