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# *Interactive comment on* "The relaxation of residual inclusion pressure and implications to Raman-thermobarometry" *by* Xin Zhong et al.

**Xin Zhong et al.**

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General reply to referee 2

We thank the very positive feedback from the reviewer and helpful comments in the review letter. We have carefully considered all the comments given by the reviewer and made corresponding changes to the manuscript. In this reply letter, the original comments from the reviewer are in black color and our replies are in blue color. The revised manuscript has been uploaded.

I apologize for the delay of the review process but I had too many administrative issues to deal with first. The manuscript is actually one of those that make the review process very easy. It is well-written, it has well organized structure and the addresses a timely



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topic with a novel approach. On top what referee 1 has been already mentioned, I only have suggestions, basically no real criticism. I like the way the authors explain the methods in chapter 2. And finally discuss the most important findings of the study in a reasonable detail. I would only suggest to spent less words on the “distance to surface” issue (chapter 3.2) as this is not really new, but focusing more on the “over-“ and “underestimation” of the pressure depending on the PT paths the samples take. This is really exciting and should be highlighted even more.

We totally agree with the reviewer that the “distance to surface” issue has been studied in several papers cited in the manuscript. We took the advice and move the previous derivation part into the appendix. However, we would like to highlight that the new thing that we present is this very simple form of pressure distribution (now in Eq. 22). Compared to the cumbersome formulas of stress components in e.g. Seo and Mura (1979) and Mindlin and Cheng (1950), the pressure distribution can be simplified to a concise closed form. This is particularly relevant in studying the residual pressure distribution and pressure release due to proximity to thin-section surface. Also, when performing numerical model benchmark, this is particularly helpful because of its simplicity. If one wants to perform a fast validation on the numerical solution, our Eq. 22 can be easily used to compare with the pressure calculated with numerical code. Therefore, we leave the final equation for pressure distribution (Eq. 22) in the main text and most of the derivations in the appendix. The “distance to surface” part has been revised accordingly to clarify these points.

To me the authors could consider to keep the inclusion-host relationship a bit broader in the begin of the introduction, such as considering inclusions in a bit broader context (see Farber et al 2014 CMP, for instance), but this may result in a less sharp structure.

We agree with the reviewer’s point to make the text of wider appeal to general readers in petrology. Therefore, we have added several references including the suggested one at the beginning of the text to reach a broader audience.

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