

We greatly appreciate the general assessment of our open source software and manuscript by reviewer 1. In the following find our detailed Response to the specific comments

## **Response to Reviewer #1**

### SPECIFIC COMMENTS

It is not explicitly stated that the GUI is for handling data from ThermoFisher Neptune instruments only or how data from other instruments can be handled. This would be beneficial to users of the  $^{230}\text{Th}/\text{U}$  dating method with data from other instruments.

We thank Reviewer #1 for this hint. We will add a clear statement in the publication. In the current state, the GUI is handling only data from ThermoFisher Neptune instruments. However, the Python-based code should be easily adapted for other instruments data formats. We suggest, e.g., to add the following statement to the last paragraph of the introduction:

“In this study, we present our user-friendly GUI and the underlying algorithm for data treatment and age calculation. The software is currently developed and optimized for ThermoFisher Neptune MC-ICP-MS instruments, but the open-source code in principle allows adaptations to other setups, instruments, and data outputs.”

We will also change the first sentence of the conclusions to:

“We here provide an algorithm combined with a user-friendly GUI application for the treatment of  $^{230}\text{Th}/\text{U}$  MC-ICP-MS data obtained by ThermoFisher Neptune instruments, and subsequent age calculation and correction.”

### TECHNICAL CORRECTIONS

Line 51: The use of "(i)" is confusing since no list is provided.

We will remove this.

Line 62: “initial Thorium” should be “initial Th” for consistency within the same sentence and entire document.

We will change this.

Line 259: In this section “3.3 Analysis tab” the numbers in parentheses are not consistent with Figure 3. For example, line 265 makes reference to (3) for “Start Analysis” and (4) for presentation of the results, but there is no (3) and (4) in Figure 3.

We apologize for the inconvenience; we will change the numbers in the text.

Line 263: The exemplary Excel file for the weight table provided in the supplementary data should have its sheet names and column headers translated from Deutsche to English for accessibility.

We will change this file and upload a translated version.

Line 310: Delete the first “as well as the algorithms Stalage, copRa and bchron linear interpolation”

We will delete this duplication.

Line 316: Caption for supplementary Figure S3 has “223Th” instead of “232Th”

We will change this accordingly.

Line 353: “which is much stronger influenced by” please revise. Strongly instead?

We will change to “strongly influenced by”.

Line 373: “this correction particularly” is missing “is”

We will insert “is”.