

Interactive comment on “Robust Isochron Calculation” by Roger Powell et al.

Anonymous Referee #3

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This manuscript examines regression approaches used in isochron age calculations. As a frequent user of regression calculations that are part of determining isochron ages, I welcome a renewed discussion on this topic. However, I am not a statistician and so my review will be of little use regarding the nuts and bolts of this paper and not in a position to judge the scientific significance and quality. Rather, I will comment on how effectively (or not) the authors are communicating the essence of their results. One measure of a paper is how well it communicates its message to its intended audience. I recognize that mainly specialists—those interested in the statistics of isochron and age calculations—will be the (small) handful of readers of this paper, but it would benefit the practitioners in this field as well if it was made more accessible. There are a few ways to do this. First, throughout this article, the writing is very much filled with jargon, making it difficult for the general reader to access the meat of what the authors have to say. This is especially important in the introduction where the authors should

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communicate more clearly why their work is important. Why would we want to use HUBER approach, rather than YORK? Are the calculated dates themselves different? The uncertainties? Whether or not the regressions meet the definition of an acceptable date/isochron? These questions are not at all well raised, much less effectively answered, in this manuscript. If the authors want their work to have impact, they need to do a much better job of communicating and making their work more accessible to a broader audience.

Other comments:

The nature of a manuscript like this is to include many formulas. I get that, but at the same time, all of the terms in the formulas need to be defined. This is also true for the tables—they need to be explained more fully to communicate their information effectively with the reader.

The writing in general is very stiff and not easily digested. Part of this is the use of too much jargon, but it could use “softening” and significant wordsmithing throughout. Perhaps some of the coauthors could help with this.

Small, but important point: From the beginning the ms refers to the mswd parameter to define goodness of fit and whether or not a regression passes or fails the mswd test. It would be useful to have a general discussion at the beginning of what defines “passing” or “failing”.

In summary, I am not able to comment on how robust the statistical treatment discussed here is, but I do feel that the ms should be made more “accessible” to a broader audience.

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