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Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)

1. I would like the following to be clarified for the readers – adding a component on how these examples might be run (e.g. from which databases the data can be obtained, which components would be needed) – this would be very helpful for potential students wanting to use map2loop/map2model for these regions.

Line 560: The choices made by the map2loop and map2model code are inspired by the thought processes of geologists when manually building a 3D geological model from the same data. There are many small or large decisions and assumptions that are made when developing the model, and the discussion below highlights some of the areas where further work needs to be done to reproduce the manual workflow. In this paper we have used an example from Western Australia, however similar examples for the Northern Territories, New South Wales, Victoria, Queensland, Tasmania and South Australia can be run using the map2loop library).

This has been added at line 563

2. Others have worked on automated extraction of data from geophysical data, e.g automated fault extraction Wu & Hale (2016) [<https://library.seg.org/doi/abs/10.1190/geo2015-0380.1>] and stratigraphic units Bugge et al. (2020) [<https://library.seg.org/doi/abs/10.1190/geo2019-0413.1>] that could be mentioned here.

Reference to these works has been added

Line 649: al., 2021), and is beyond the scope of this paper, but could help to define subsurface orientations or even the (automatic?) extraction of geological structures from geophysical data

Reference to Wu & Hale added here to cover this point.

Harrap – Edits Round 2 – Jessell et al 2021

56-59 sentence is broken

Fixed

67 missing .

fixed

80 the sentence implies you also provide everything these tools would possibly hope for... implied anyways (just being picky).

Left as is

84 yes and no. If you had just a section, fine. If you had a well constrained section and a map, then there is obviously more information there in 3d ... intro structural geology labs... J

Well constrained sections implies lots of drillholes or seismic in basins, otherwise it is still based on surface info. This is already discussed so left as is.

144-145. Already stated. Unless you are adding particulars e.g. as you do at 157 you can probably delete.

Deleted

196 reads a bit oddly. Are you saying numbe of servers because you cited one of many servers or am I missing something? Perhaps reword?

clarified

235-240 is this coded directly as ... code ... or do you use a rule base or rule table system for later extensibility (just curious, probably doesn't need to be added, but if you did, that's interesting.

Clarified

315-324 what about growth faults (which you discuss much later in another context)

Clarified

326 first , is unnecessary.

fixed

431 improper use of : use () instead

Fixed

440 say or not and?

fixed

455 have not can?

fixed

470 Jessell et al 2014 is not in the reference list. Careful, you might offend the guy.

Yes it is, line 1008

562 At several points in the paper you mentioned things that are underway as studies. It feels like these should be restated here. Some are not.

Text added to summarise these efforts

580 I would argue that it eventually provides a testbed for other kinds of studies, for example in education, looking at cost effectiveness of drilling, etc. etc. Also, if this ever worked robustly and easily for the average geologist I could imagine using it iteratively while doing mapping. Though in that case one might just build a proper 3d system rather than doing multi-tool with extraction...

Left as is, as much of this is already covered