Solid Earth Discuss.,
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Solid Earth
Discussions

Interactive comment on "Permian plume beneath Tarim from receiver functions" *by* Lev Vinnik et al.

Lev Vinnik et al.

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A figure displaying the values in Table 1 would be preferable to Table 1 (also suggested by reviewer 1) as it would give a good visualization of which parts of the study region have a large number of stacks. We have removed the Table and replaced it by a new Figure 3.

The reviewer would like "the authors to try and find other evidence that may indicate whether the tectosphere extends to over 400km depth." and suggests looking at azimuthal anisotropy. I understand this may be difficult to do with your data, but please, include the reviewer's concern and your response in the paper discussion for completeness. We have addressed this in lines 191-196.

Reviewer 2 proposed a change to Figure 5, which I think is good advice. However, I do not understand your response. What do you mean by positive effect? Why couldn't

you replace the 400my curve by a 300my curve? Figure 5 shows that a significant thermal anomaly in the mantle can be preserved for 300 m.y. This is the time interval between the anomalies calculated for 400 m.y and 100 m.y. The interval of 300 m.y. is determined by geologic considerations (the Permian age). You want us to show the curve not for 400 m.y. but for 300 m.y. Then to get the interval of 300 m.y. another curve should be for 0 m.y. This will be delta-function which has no lateral dimension and cannot image realistic thermal anomalies.

Please also note the supplement to this comment:
https://www.solid-earth-discuss.net/se-2018-41/se-2018-41-AC4-supplement.pdf

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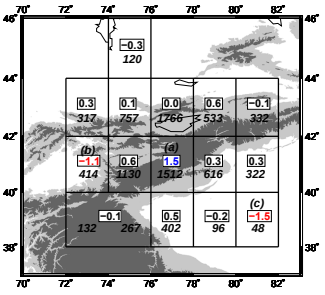
70°
72°
74°
76°
78°
80°
82°
46°
44°
42°
40°
38°
−0.3
120
0.3
317
0.1
757
0.0
1766
0.6
533
−0.1
332
(b)
−1.1
414
0.6
1130
(a)
1.5
1512
0.3
616
0.3
322
−0.1
132
267
0.5
402
−0.2
96
(c)
−1.5
48

Fig. 1.