

Editorial notes (need to be corrected or resolved):

Page 1 - line 18

Please capitalize "moho"

starting from Page 2 - line 33

In running text, please consistently use "Fig." - not "Figure".

Page 3 - line 30

one space too many after end of sentence

Page 4 - line 30

one space too many after end of sentence

Page 4 - line 35ff

Could you be a bit more specific as to how you define and determine "grain size" ?

Page 5 - line 18

It would be important to know what is the grain size here, in a case where you have elongated grains.

In Fig.3 and Fig.4c, you may want to specify "long diameter" or "equivalent diameter" or whatever it is...

Page 5 - line 33

Much as I look at Fig.4a and 4b. The rims look bright to me (as they should, being depleted) - not dark.

Also, please refer to both Fig.4a and 4b.

Page 7 - line 37

Please use Ga instead of byr.

Page 21

Figure 4

Why did you use uppercase A,B,C,D while references to image are lowercase? I am not sure if Solid Earth has a policy about using upper- or lowercase.

Page 21 - line 6 - Figure 4 - caption

As Fig.4d show a cross-polarized photomicrograph (...), the observation that "grains with c-axes oriented perpendicular to the plane of the section are dark in panels (B) and (D)" cannot strictly be upheld. Whether or not a grain appears dark on a cross-polarized photomicrograph not only depends on the inclination of the quartz c-axis w/ r to the image plane, but also on the orientation w/r to the horizontal and vertical direction within the image plane. In fact you also find dark grains in Fig. 4d that are not dark in Fig. 4d. If you had used circular polarization, the correlation between Fig. 4b and 4d would be perfect.

Please modify or delete this remark from the caption.

Page 22 - line 3

Figure 5

"The data are jittered along the x axis to increase visibility."

As you are plotting Ti concentrations in quartz vs. the distance, this sentence makes no sense here.
Please delete.

Page 22 - line 11

Figure 6.

No, you are not plotting "grain size vs. Ti concentration" but the reverse. One always plots Y against X (where X is the independent variable and usually the horizontal),
Please correct.

Page 23

Figure 7 (cf. Figure 4)

Why did you use uppercase A,B while references to image are lowercase? I am not sure if Solid Earth has a policy about using upper- or lowercase.

Page 23 - line 13

Figure 7 (cf. Figure 5)

"The data are jittered along the x axis to increase visibility."

Again, as you are ostensibly plotting Ti concentrations in quartz vs. the distance, this sentence makes no sense here.

Please delete.

Page 24 - line 11

Figure 8

Again, you are not plotting "grain size vs. Ti concentration" but the reverse. (see Fig. 6)

Please correct.

Page 25 - line 11

Figure 9

"Data are jittered along the x-axis."

Same as in Figure caption 7, this sentence makes no sense here.

Please delete.

Instead, please comment on the inset.

Page 26 - line 4

Figure 10

"Image" ? Please specify.

Comments (respond at your own discretion):

Page 1 line 31

you say "...where the examination of plate boundary phenomena ... can be informed by observation"

getting close to Yogi Berra's famous quote: "You can observe a lot by just watching."
:-)

Page 2 - line 30

you say: "classic sequence of fault rocks: protomylonites, mylonites, ultramylonites, and finally cataclasites" - cataclasites are "classical" if the fault development is following a cooling path or later-stage brittle overprint....

Page 3 - line 3

you write: "clockwise rotation (when viewed from the SW) and dextral shearing..." - I am not familiar with the details of the Alpine fault deformational history... So I wonder: are "clockwise rotation" and "dextral shearing" two different events or both the same? Specifying the viewing direction ("when viewed from the SW") indicates to me that the "rotation" must be on a vertical or very steep plane, and presumably applies to the *dextral shearing" too. If so, and if both "clockwise rotation" and "dextral shearing" are the same you might consider calling this "top to the NE shearing" and save yourself the viewing direction...

Page 3 - line 10

What is the basis for the strain determinations? Any references ?

Page 3 - line 38 (Page 4 - line 1

why "common in either" - why not "common in both" or simply "common in" ?

Page 23 - line 10-13

Figure 7

Very long caption. "The lack of a clear trend in (B) suggests that..." etc. until "... not available for panel B."

You may consider inserting (and possibly shortening) this part of the caption into the running text on page 6 - line 19.

Page 24 - line 5-11

Figure 8

Very long caption. "Away from the fault this trend..." etc. until "... of fine grains in the ultramylonite."

I think it would be better to move this descriptive part of the caption to the running text on page 6 - line 35.

Page 27 - line 5-10

Figure 11

Very long caption. "Ti activity is constrained by the fact that..." etc. until "... as summarized by Toy et al. (2010)."

Consider moving this part of the caption to the running text on page 8 - line 9.

Page 28

Figure 12

In a time where it has become fashionable to attribute every brittle microstructure to an earth quake, I would welcome if you could label the horizontal line in Figure 12 as "limit of seismicity" (as in text) and remove "Earthquakes" and "No Earthquakes". - Else, the next thing you know is somebody citing your paper as a demonstration of earthquakes as producing ultramylonites with low Ti-in-quartz values.