

This paper is concerned with the strain partitioning that is occurring as the Adria microplate converges with the Europe in the eastern Southern (European) Alps. The authors point out that this region has a complex tectonic history which is reflected in the recent seismicity which shows both reverse and strike slip faulting. They dig 3 palaeoseismic trenches across one of the thrust faults in the region, and use ¹⁴C radiocarbon dating to constrain the timing of previous earthquakes on the fault. They find 3 separate events in their trenches and correlate the most recent event with an earthquake that has previously been identified by historical shaking records. In doing so, the authors provide convincing evidence that they have determined one of the source faults of the 1511 earthquake.

The authors make a lot of inferences that both structures were active at the same time. The data do not support such a statement as the authors only conducted palaeoseismic analyses on the Colle Villano thrust fault (CVT). The abstract and discussion and concluding remarks should be amended to make this clear. It would be fine to *discuss* the possibility that both the CVT and the Borgo Faris-Cividale fault (BFCF) are active at the same time in accommodating partitioned strain. However, it needs to be clear that the data only support the activity on the CVT.

Although the palaeoseismic trenches across the CVT, and their relationship to the historical earthquakes in the region is the main focus of the I have one question which the authors may wish to address. What evidence is there that the BFCF is still active? There appears to be no clear right-lateral deflection of the rivers that cross the fault. This could be addressed by showing geodetic interseismic strain across the fault if such data already exists (I accept it's beyond the scope of this paper to collect or process such data), or through higher resolution maps of the drainage crossing the BFCF.

In general, the quality of the figures needs improving with often faint lines and difficult to interpret maps.

Page 1

Line 26: Do the authors mean 'reverse' rather than 'inverse'.

Page 2

Line 25: You mention the geodetic data here (and comment on GPS time series later in the discussion (page 6, line 5). Whilst you provide the references for this data, it would help the readers to see GPS vectors plotted on a map. These could be added to the top left part of Figure 1 to aid readers in interpreting the tectonics of the area. It would be very useful to see how/if the geodetic strain is partitioned in the same way the authors claim the strain is partitioned by the geology (this may also help answer my question about the activity of the BFCF – see above).

Page 3

Line 15: I am unfamiliar with the term 'mesostructural' please use a simpler term here. Please also describe what sort of kinematic indicators you have plotted in Figure 1.

Page 4

Lines 7-10: Please give more information about the core you collected. This should include a figure with a detailed core log and photographic examples of the units found in the borehole.

Page 5

Line 18: extrados is a spelling mistake – this whole sentence doesn't make sense at the moment.

Line 25: capitalise B.C.

Page 6

Line 23-25. This last sentence is very long and doesn't entirely make sense, particularly the final part of the sentence. Suggested edit: '...where interseismic coupling suggests elastic strain is building up at seismogenic depths which will be released in future large earthquakes.'

Figure 1:

In general I think this figure would benefit from being split into two: the bottom half of the figure (the seismic profile) would fit better in a separate figure where you could show the section both with *and without* the interpretation which would allow the reader to make an informed decision on the validity of their interpretation. Please also place an x-axis on this figure as the current scale makes it difficult to read.

Top left hand part: It would be nice to see the focal mechanisms of the recent seismicity actually plotted on the map (rather than in the legend) as this would make the relationship between the strike-slip and thrust faulting clearer. Please include axis on the map indicating the longitude and latitude of the map. In general the lines could be made thicker and it's difficult to differentiate between the different faults and the geographical boundaries. At this scale, a simpler map containing the main tectonic features as well as the recent and historical seismicity would be of benefit to the reader. Consider adding GPS vectors to this map (see earlier comment).

Figure 2:

The inset in part a is difficult to read. This would benefit from being made larger with the location of the palaeoseismic trenches more clearly indicated and the thickness of the contour lines etc increased. Please indicate the source of the digital elevation model.

The axis of part a need improvement: there is a lack of detail and it is not clear what units the map is projected in. Please include a log a details of the bore hole indicated by the yellow dot in part a.

Figure 3:

I know this information is already in the caption to the figure, but it would be helpful if you indicated on the photos themselves which of the trenches is being shown in each photo.

Figure 5

This would benefit from being split into two parts with the conceptual 3D diagrams and the historical earthquake shaking separated. For the historical earthquake shaking figure, please include all major faults in the region as well as the two faults investigated in this paper.

Auxilliary Material:

Both tables could be included in the main text of the paper with little expansion of the length of the article. The formatting of the both tables should be improved. Furthermore, Table 2 requires additional information such as which stratigraphic unit each of the samples has been collected from, the laboratory sample code for each sample, and both the uncorrected ^{14}C age, the calibrated ^{14}C age and the calendar year. Details should be given of the ^{14}C calibration curve used.