

## ***Interactive comment on “A Quaternary Fault Database for Central Asia” by S. Mohadjer et al.***

**J.E. Daniell (Referee)**

j.e.daniell@gmail.com

Received and published: 18 October 2015

This paper provides a wonderful insight into faults in Central Asia that are capable of causing major earthquakes for a number of countries ranging from China to Afghanistan. It will be of great use for seismic hazard assessment fault characterisation.

Previous studies across the area such as some of the USGS work (Boyd et al, Taylor and Yin etc etc.) have not been aggregated in such a database before, and this will prove very useful for future efforts and is a major effort to provide a useful interface that is open access, and provides links to these studies.

The web portal associated with the paper is simple to use and provides great information via red faults on a map background where the selected fault is then shaded and

C2067

components such as geodetic and geologic displacement rates as well as linked papers are then detailed. Other than that, the descriptions of the SQL and web components are very detailed and easy to follow within the paper.

Just focussing on Afghanistan, it is interesting that there are still a lot of deformation rate studies remaining for the country. The mapping quality with alignment to ASTER GDEM is very useful for the accurate use within GIS.

The paper is very well written and is well worth publishing. There are some minor technical corrections below:-

General Comments: ASTER GDEM vs. SRTM 30m, would be interesting to see whether you get better definition as there are quite different results.

Web Portal: A linkable system for extraction of information on multiple faults in a search window would be useful rather than a click system, but the system at the moment showing the name of the fault is also useful. But it is a great portal!

Active Faults: I am used to the definition of this through Holocene period faults, a more accurate definition may be required here as to the use of Quaternary fault sources.

P5601: Line 6: Approximately 195796 fatalities? There is great uncertainty in the death tolls for each earthquake. i.e. The Kashmir earthquake etc., probably less exactness is better in this case. Some loss databases have around 695,000 fatalities in total for this time period (depending on Haiti death toll etc.), thus, this would be roughly 28%.

Consider changing the diagram associated with these as the 2013 Baluchistan earthquake is of a different scale (900ish deaths) from the others indicated in terms of death - perhaps log scale for magnitude of event i.e. Sichuan and Kashmir one size.

One star is missing, as there are only 6 on the diagram, yet 7 mentioned in the text - I presume 2010 Yushu in Tibet - ca. 3000 deaths (2968) is the missing one?

P5601: Line 12: The Hindu Kush earthquakes had a significant number of injured (in

C2068

the 10s of thousands, as well as homeless). This sentence should be changed to "caused over 5000 fatalities, left around 10000 injured and tens of thousands of people homeless."

Of course the 5000 fatalities is subject to opinion as the Feb and May 1998 quake tolls have some uncertainty.

P5607: Geodetic and geologic slip rates are reported for 20 faults - perhaps a table here, and also consider if slip or displacement is meant. The Figure 2 is fine, but perhaps more could be done with this data for comparison purposes. A graph or comparison of some of these 20 would be good.

Figure 1: Do you really have completeness for all  $M > 5$  from 1900? Check the completeness of ANSS. A comment should be made to this effect as the diagram probably shows unreasonable densities of events.

Figure 8: the coordinate system would come in handy here - WGS-84, or projected coordinates?

Other than this, I hope that the web portal and database continues to grow. A wonderful effort by the authors.

---

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 5599, 2015.