

Response to referee #3 of the manuscript
“China Active Faults Database and its Web System”

We are very grateful to referee #3 for their constructive comments that greatly improved the manuscript. Below is a point-by-point reply (RC: referee comment; AR: author reply)

RC: Line 30-31. Change “A close relationship exists between the strong or great earthquake and the spatial feature of an active fault.” to “A close relationship exists between the large or great earthquakes and the spatial distribution of active faults.”

AR: This change has been implemented.

RC: Line 31. Change “an earthquake” to “earthquakes”.

AR: This change has been implemented.

RC: Line 33. Change “recorded to” to “associated with”.

AR: This change has been implemented.

RC: Line 107. Change “seismo-active” to “seismically active”.

AR: This change has been implemented.

RC: Line 128. Change “seismo-active” to “seismically active”.

AR: This change has been implemented.

RC: Line 157. Change “analyzing” to “analysis”.

AR: This change has been implemented.

RC: Line 159-161. “In earlier research, the positional precision of the exposed faults was restricted by funding and locator devices, and interpreted top breakpoints of the blind faults from low-resolution seismic petroleum exploration profiles restricted their positional precision.” The meaning is unclear.

AR: Thank you for your comments. We have rewritten this sentence as follows: “In earlier research, the low-resolution seismic petroleum exploration profiles caused the low accuracy of the interpreted top breakpoints. Because of that, the accuracy of positional precision of the blind faults was not precise. The locator devices with low positioning accuracy limited the accuracy of positional precision of the exposed fault. The observing sites had lower density than nowadays because of less funding, causing low positional accuracy.”

RC: Line 186-189. “Common dating methods include radiocarbon (^{14}C), cosmogenic nuclides (^{10}Be), and luminescence techniques. They are used to identify whether or not a fault is active, to calculate its slip rate during a certain period, to determine when a paleo-earthquake occurred, paleo-earthquake recurrence interval, and the elapsed time of the last earthquake of the corresponding fault segment.” Do you use ages obtained for segments to divide the entire fault into sections that could be ruptured simultaneously (e.g. by combining several segments)?

AR: We appreciate your valuable insights. The fault is separated into segments based on the mapped geometry. The ages obtained from a single geometry segment presented the age of this segment. It determined the latest active age of the fault, although may not be the rupture behavior. We added these sentences to the second paragraph of the Section 3.3.

RC: Line 222-224. “The mapped blind fault trace is a line of vertically projected the uppermost points on the ground, which are obtained by using the comprehensive multi-level exploration method.” Not very clear how you find sites where you have to perform all these studies. If the fault is blind how do you select sites for geophysics, drilling, etc.? What morphological expression do you need?

AR: Thank you for your pertinent comments. We added additional details on how to select sites for

geophysics and drilling at the beginning of this paragraph as follows: “Firstly, we collected petroleum exploration profiles, historical earthquakes, and published references. The location of the blind faults was inferred from the collected petroleum exploration profiles. Secondly, the historical earthquakes and published references about tectonic settings were used to determine the faults associated with earthquakes. The approximate location of collected petroleum exploration profiles was selected for geophysics and drilling sites.”

RC: Line 241. Change “seismo-active” to “seismically active”.

AR: This change has been implemented.

RC: Line 243. Change “the” to “such”.

AR: This change has been implemented.

RC: Line 241. Delete “seismo-active”.

AR: This change has been implemented.

RC: Line 322-323. “Oblique faults consist of left- and right-oblique slip faults.” It would be useful to add data on vertical components that might be either normal or reverse for oblique faults.

AR: Thank you for the suggestion. Oblique faults consist of left- and right-oblique slip faults, with vertical components that might be either normal or reverse.

RC: Line 342. Change “meg-strike-slip” to “mega-strike-slip”.

AR: This change has been implemented.

RC: Line 342. Change “dtriking” to “striking”.

AR: This change has been implemented.

RC: Line 408. “-2021.6.30”. And what occurred later? In 2022-2023? Does the catalog have been updated?

AR: The catalog has been updated to 7.30. 2023. We have updated the article and Web System.