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Interactive comment on “Spatial evolution of Zagros collision zone in Kurdistan – NW Iran, constraints for Arabia–Eurasia oblique convergence” by S. Sadeghi and A. Yassaghi

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I would like to thank Prof. Fergusson for his thorough and constructive review of this manuscript. We found his comments very useful in improving both the content and presentation of the Ms. Below, we address the points which he had raised during the review of the Ms. For your convenience; the corrected parts of the manuscript are highlighted using track changes and its file is also attached as aux. file.

Comment: P. 2738 – line 10 – why cannot it be considered a suture zone? It is a zone with discontinuous ophiolite fragments which is typical of suture zones. You need to explain what you are getting at – I cannot see your point. Reply: The sentence is

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Discussion Paper



Interactive
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reworded to show that the Main Zagros Thrust which is considered in the study area as a suture zone was documented by Nemati and Yassaghi (2010) as a fault within a suture zone consists of several faults .

Comment: P. 2739, line 5 – explain what you mean by “middle décollements” and the differences in basal décollement rheology between the Lurestan and Dezful Embayment (i.e. what are the differences or difference?). Reply: The sentence is reworded to show the differences in the type of basal décollement in the Lorestan and Dezful Embayment as well the absence of the Middle décollements (e.g. Dashtak formation) in the Southern part of the Dezful Embayment.

Comment: P. 2739, line 20 – place the details relating to the figure in the figure captions (including the source citations). Reply: Corrections were done in the text as well as figure 3 caption

Comment: P. 2740, line 15 - Figure 3 – I eventually found “C” on this figure after a long search (C needs to be made much more visible) – at the scale produced the readability of all figures is difficult given the size of much of the text on figures. Is the lettering on figures at the right size for the journal requirements? Reply: Corrections in the Fig.3 was done to make texts more visible. Figures are resized during the journal typeset.

Comment: P. 2740, line 23 – give a reference in regard to unconformities in the Folded Belt. Reply: Reference is added to the text

Comment: P. 2742, line 6 (also line 12) – what are these “drag” folds – are they genuine drag folds or are they fault-propagation folds (i.e. formed by ductile deformation preceding fault propagation)? Reply: since there is no clear evidence to document the process of folding development but they do develop during faulting the term “drag folds” are used. To avoid possible misinterpretation the term “drag” is changed to “asymmetric”

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Comment

Comment: P. 2742, last paragraph – how does the last sentence of this paragraph relate to the rest of the paragraph? I found this confusing and could not see what you mean? Please clarify. Are the “narrow bedding parallel shear strips” a 3rd domain?
Reply: the sentence is reworded to clarify that the “narrow bedding parallel shear strips” are developed in both domains.

Comment: P. 2746 – Section 5.1 – add a reference to global plate motions indicating oblique convergence in the Late Cretaceous in this part of Neo-Tethys (see Figure 24 in Seton et al., 2012, Earth Science Reviews). Reply: a sentence was added to the text to constrain oblique convergence in the Late Cretaceous using global plate motions.

Comment: P. 2748, section 5.3 – include reference to the timing for collision provided by the plate reconstruction of McQuarrie and van Hinsbergen (2013, Geology 41, 315–318). At the end of the paragraph also include reference to predications of global plate reconstructions in regard to oblique convergence across the Zagros part of Neotethys (see Seton et al., 2013 and McQuarrie and van Hinsbergen (2013). Reply: References were included in the section.

Comment: P. 2763, Figure 8a – I am confused by your arrows – are these slip directions – if they are strike slip faults they need a sense (dextral or sinistral)? Please explain in your figure caption. Figure 8b – for Fig. 13, a, b, c on the map – do you mean Fig. 11? Reply: Arrows are movement direction of faults interpreted using drag folds and fault striations. Movement sense of faults is also shown for pure strike-slip and reverse slip faults. The name of Fig.13a, b, c changed to correct names (Fig.11a, b,c).

Comment: P. 2764, Figure 9 – location of these photographs needs to be shown clearly on a previous figure (Fig. 8). Reply: Location of the photograph was show on Fig.8b.

Comment: P. 2743, last line – Fig. 17f? Reply: Fig. 17f was deleted in the final version but its text was not omitted.

Comment: P. 2757 – in Figure 2 legend – gabbro is mis-spelt. Reply: Spelling of

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“gabbro” is corrected.

Please also note the supplement to this comment:

<http://www.solid-earth-discuss.net/7/C1447/2015/sed-7-C1447-2015-supplement.zip>

Interactive comment on Solid Earth Discuss., 7, 2735, 2015.

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7, C1447–C1450, 2015

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C1450

