

Interactive comment on “Folding and necking across the scales: a review of theoretical and experimental results and their applications” by Stefan Markus Schmalholz and Neil Mancktelow

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This is not a formal review or editorial recommendation, but just a couple of minor suggestions to the authors for consideration while preparing their revisions.

Section 2.1.1 on single-layer folding is (understandably) pretty long. Please consider some further subdivision (for example, according to rheology and/or analysis method?).

3D viscous folding is briefly introduced at the end of section 2.1.1. How well do 2D studies in general do in approximating 3D settings? Are we fine to first order with 2D or may we be oversimplifying essential components?

Symbol ‘m’ is used for number of layers at line 527 and for half the number of layers at

line 552, please make consistent.

Some symbols are used for different parameters. I understand this may be difficult to avoid seeing the large number of equations, but could you have a look? E.g., 'b' in equation 26 and line 590, 'm' on lines 527/552 and 935

Clearly some kind of selection of the vast literature of experimental results needed to be made to keep the review practical. But could you say how you chose the studies to discuss? (section 2.2)

Sections 2.2 and 3.2: Would it be possible to add a brief summary statement that discusses what the experiments have contributed to the theoretical analyses, that is, how they have brought understanding of folding and necking further?

Section 3.1.3, lines 1046-1053 has repetitions, necking is defined twice, as is the width of the necking zone

Figures:

(a) Figs. 2, 5, 6: Please attribute the photographs; (b) Fig. 2C: Add a scale; (c) Fig. 4: Please add the size of the domain, the size of the initial perturbation, the numerical method that was used, and that the results were computed for this study (I assume); (d) Figs. 12, 13, 17 and 18: Please increase the colour contrast between the black and blue lines (or dash one); (e) Fig. 14: Add also symbols to the axes and in the caption to agree with type of labelling in previous figs 12 and 13; (f) Fig 17: Does this figure need values for A_0 , S_0 and η_m ?

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Discussion paper

