We thank Susanne Buiter for her helpful comments.

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?).

More than three levels of subdivisions are not allowed in Solid Earth. We hence keep the original subdivision.

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?

3D folding: The answer depends on the fold geometry. Many natural folds seem to have a cylindrical structure, that is, their lateral extend along the fold axis is considerably larger than their wavelength. For such cylindrical fold shapes 2D solutions are applicable. However, other natural folds are clearly not cylindrical (such as dome and basin fold shapes) or have been formed by two consecutive events of deformation. For such fold shapes, 3D models are required.

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

Meaning of symbol *m* has been made consistent.

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

We replaced *b* in line 590 with H_m. We also replaced *m* in line 935ff with *r*.

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)

The sentence below has been added in the introductory paragraph to give a rationale for our selection – although the selection must remain personal.

"Only a limited personal selection of the many published studies can be presented here but, in keeping with the overall theme of the review, we particularly highlight those studies that either specifically constrained analytical solutions or attempted to extend them to higher amplitudes typical of natural geometries."

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?

We think the short answer to this is actually already given in the sentence we have added in response to the query above as to why we selected particular experimental studies to include in this review – they provided the necessary constraint and extension to higher amplitudes (until this could be done efficiently numerically – now this can be done on most desktop computers but that was not the case until quite recently).

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

We removed the repetitions.

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 A0, S0 and eta_m?

We attributed the photographs in the captions.

Fig. 2C has a scale; it is a coin above the calcite layer in the middle-left of the photo.

For Fig. 4 the requested information have been given.

Color contrast: Figs. 12, 13, 17 and 18 have been modified.

Fig. 14: symbols have been added.

Fig. 17: Caption has been elaborated.

Stefan Schmalholz and Neil Mancktelow