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Interactive comment on "Syn-thrusting, near-surface flexural-slipping and stress deflection along folded sedimentary layers of the Sant Corneli-Bóixols Anticline (Pyrenees, Spain)" *by* S. Tavani et al.

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This paper presents the results of a field study of brittle faulting mostly related to flexural slip in a growth syncline and along the principal unconformity. The fact that a large parts oft he involved sediments were deposited during folding allow a good temporal resolution of formation of structures. While the study is well written and nicely documented, I have a few suggestions to improve the manuscript:

(1) In the introduction, I miss a regional cross section to illustrate the larger scale structures shown on the map in figure 1A, namely the Tremp syncline, Boixols anticline,

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Discussion paper

and Santa Fe syncline. This section would both illustrate the nature of the main ramp (line 107) and the inverted rift structures oft he Organya basin.

(2) As the authors state (lines 282-286), the geometric model (Fig. 6A) should be applied with caution. I miss a despription of reasons for applying this model, and a discussion of the discrepancies between the model and observation. I think it is important to note that the pin line in the model is in the undeformed (?) horizontal forelimb of the syncline, which would be the case for drag folds, and not in the core of the syncline, where it would be in flexural slip folds formed by layer-parallel shortening. The two cases could quickly and easily distinguished by calculating the amount of layer-parallel slip, which would be larger using a pin in theforelimb of the fold, and this could give a justification for using a specific model.

(3) On the first sight, it is very hard to understand the existence of the St. Maximi syncline and Remolina anticline, as their axial planes are parallel to bedding in the pre-folding units. It seems that these folds result from shortening perpendicular to bedding of the the pre-folding units and thus imply volume loss in these units. Alternatively, inhomogeneous flexural flow/slip in the the pre-folding units could cause this folding. Localized layer parallel slip is in the southern limb of the San Maximi syncline points to the second mode of folding. This should be clarified in the text. Are there lithologic changes in the pre-folding sediments, that could give a reason for inhomogeneous flexural slip/flow? (4) In all interpreted field photographs, arrows und j-shaped arrows parallel to bedding are shown. Indicate what these arrows mean.

Please also note the supplement to this comment:
http://www.solid-earth-discuss.net/se-2017-2/se-2017-2-RC2-supplement.pdf

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