TEXT	
Line 13 S-shaped fold?	Erased “s-shaped”
Line 15 shallowly»gently	Done
Line 28 broad?	Erased “broad”
Line 29 to model » for modelling	Done
Line 32 consequences on » consequences for	Done
Line 33 in a wide » with a wide	Done
Line 36 imposes » constrains	Done
Line 43 with the direction » so that the direction	Done
Line 43 maximum stress » maximum compressive stress	Done
Line 43 keeping at low able to layers » maintains a low angle to the bedding	Done
Line 43 to layers »to the bedding	Done
Line 44 maybe not » may not be	Done
Line 48 come uniquely »come	Done
Line 49 deciphering for which dip values a given »determining the bedding dip when a given	Done
Line 51 allow to drastically reducing »serve to drastically reduce	Done
Line 52 As a matter of fact, » In fact,	Done
Line 56 few » only a few	Done
Line 59 macro and » macro- and	Done
Line 61 pre and » pre- and	Done
Line 63 anisotropies oblique to each other » oblique anisotropies	Done
Line 78 were carried » have been carried	Done
Line 82 transition » change	Done
Line 95 evidences »indications	Done
Line 113 at the northern limb » on the northern limb	Done
Line 114 The upper one » The upper thrust	Done
Line 121 strike » plunge direction	Done
Line 133 In the upper » On the upper	Done
Line 141 affects few » affects a few	Done
Line 145 in correspondence of » associated with	Done
Line 148 is at high angle » is at a high angle	Done
151 lay » lie	Done
162 for »of	Done
166 layers » bedding	Done
167 block is few »block is a few	Done
173 These faults are at » The faults are at a	Done
181 MEANING NOT CLEAR	Fixed

184 reduced down »reduced	Done
188 Faults at low angle » Faults at a low angle	Done
191 provided » exhibited	Done
217 and the bedding » and the dip of the bedding	Done
221 on top of » overlying the	Done
223 Such shear » Such a shear	Done
224 The NNW- » However the NNW-	Done
225 anticline tough. » anticline.	Done
236 where » were	Done
236 firstly provided » first given	Done
239 six key-points » six material points	Text changed. See response to comments 5 and 6 below
299 points out » suggests	Done
359 evidences for» argues for	Done
Figures	
Fig 2a is hardly visible.	We enlarged the fig 2a (and fig. 3A too) and we removed the transparency.
Fig 2b hook-shaped symbols are strange. What do they signify?	Overturned strata. We added a label for this and the other symbols in fig 2b
Fig 2 more complete caption needed to explain the symbols used.	See previous point
Geological points	
1) Line 214 and Fig2d - bedding and cleavage indicates that outcrop is on the S limb of an antiform. Doesn't agree with the cross section.	It is the northern limb of the San Maximì Syncline. We have reminded this in the text.
2) 198 Restoration is carried out by first correcting for the fold axis plunge (fig 2 and 3). This assumes that folds were non-plunging initially. Is there evidence?	We added this: *These poles to bedding are well clustered along a great circle, thus defining the axis of a cylindrical fold. This suggests that the plunge was acquired after the deposition of the syn-folding Areny Group.*
3) 227-233 The idea of flexural-slip folds accommodating shortening in a direction which not perpendicular to the hinge line is interesting. Does it work? Once the fold had initiated, slip would be difficult in an oblique direction?	The anticline has an overall E-W trend and the shortening direction was NNW-SSE. However, in detail the fold includes sectors striking WNW-ESE (where the convergence is oblique) , and other areas where the fold axis is oriented WSW-ENE, so perpendicular to the shortening direction. Fortunately, or unfortunately (depending on the point of view), the area studied in this work is characterised by a local fold axis oriented WSW-ENE (see figure 1). This is remarked in section 4: *However, the NNW-SSE direction is not perpendicular to the average strike of the hosting anticline tough. , although the local fold axis in the study area is WSW-ENE striking (Fig. 1a).* Not mentioned in the text but provided here for completeness: It is to note that in the more oblique sectors, the obliquity between flexural-slip direction and the fold hinge imposes a syn-folding hinge-parallel shear component. Coherently, in the studied anticline widespread bedding-perpendicular WNW-ESE striking

	right-lateral meso-faults are documented (Tavani et al., 2011).
4) Ramsay 1967 p494 seems relevant to your paper.	Yes it is. Text added at the end of section 2: *In addition. it is to be noted that poles to pre-folding bedding are clustered along the same great circle [i.e. that of the post unconformity beds], indicating that the folding axis was parallel to the intersection between the pre-unconformity beds and the unconformity (Ramsay, 1967).*
5) In Figure 6a it would be helpful to know which points are "material points", i.e. attached to the rock, and which are migrating through the rock, e.g. P2??.	We added the following text: *The points P_0 and P_1 are fixed and inactive, i.e. they do not move during folding and the rock does not pass through them. The point P_1 is the origin of our reference system. The point P_2 is located at the intersection between the axial surface and the unconformity and, as the axial surface moves during folding, this point is an active point that migrates through the rock. The remaining points are mobile but inactive material points, which are attached to the rock. In detail, the points P_3 and P_5 are attached to the base of the post-unconformity unit, while the point P_4 is immediately below the unconformity, and it is attached to the layer corresponding to the stratigraphic elevation of the point P_0.*
6) Is P3 a material point?	See above
7) What about the stretching of the unconformity surface indicated in Fig 6a?	There is no stretching of the unconformity. Probably the problem is that in the previous version of the figure layers were not shown due to a formatting issue (now fixed).
8.1) The axial surface migrates through the material, therefore expect complex strain history of the limbs concerned. 8.2)Why should ax surf be located there?	Such a complex strain due to migrating axial surfaces has been the focus of several theoretic papers. However, in reservoir scale thrust related anticlines only very few examples of this behaviours exist. Typically, the only evidence of migrating axial surface is provided only by bedding-parallel slip. This occurs also in the studied anticline, where we have documented that the fracture pattern is unrelated to the migration of axial surfaces (Tavani et al., 2011). We added this text: *It is worth noting that the position of the axial surface is determined by the position of P0, and thus by the value of L0 and H0. These two parameters do not influence the value of the unconformity angle. Instead, the amount of slip is directly proportional to the value of H0. However, we are interested in the sign of the slip, which is independent on H0. In agreement, provided results are unrelated to the position of the axial surface, and thus of P0, which can be arbitrarily set everywhere below the unconformity.*
9) Fig 6a, (top row, far right): The indicated sense of shear on the unconformity does not agree with the displacement of Point P4	Fixed. Arrows indicate the incremental shear, not the cumulative. This is now explained in the caption of figure 6a
10) Taking the equation for cumulative shear and measuring P5-P4 gives an increase in shear from left to right. This does not agree with your statement that the sign of incremental shear changes.	We double checked the equation for ΔS (i.e. P4-P5) and its derivative and we confirm that the derivative of P4-P5 changes its sign. In figure 6b we have added the value of P3-P4, and the derivative of P4-P5.

11) Lines 248-254. Equation 3-92 on page 102 Ramsay 1967 explains the change of sign of the infinitesimal shear strain. From this you can see that sense of shear changes once the unconformity becomes 135◦ with the shear plane (the bedding plane in the flexural slip folds).	That's our fault, the term shear was used as a synonymous with slip. We replaced almost everywhere shear with slip.
12) The equations in Fig 6a assume that the length of the Arenys rocks measured along the unconformity is conserved. However the cleavage in Fig 2d implies that there is a penetrative strain of the younger series, at least at some places.	This is a localised feature. It is true that at some places, in the silty levels, the cleavage is penetrative. However, most of the Areny group is completely uncleavaed. Accordingly, strain compatibility points out that the overall amount of layer-parallel shortening is to be considered negligible at the scale of the fold. We have added the following two cautionary notes. At the end of sections 3.1: *It is worth remarking that, despite the importance for stress direction reconstruction, the above described cleavage is a localised feature, which affects only the silty beds of the uppermost portion of the Areny Group in some outcrops.* At the end of section 5. "*However, and despite the occurrence of penetrative strain at some places (Fig. 2d),…..*"
13) 327-329 Cleavage is normally considered to be a finite strain structure. Its relationship with stress will usually be complex. Cleavage requires significant strains. The means that constant bed length assumptions are suspect, at least locally.	See previous point.
14) 369-373. The discussion of stress orientations is difficult especially in flexural slip folds. Probable the orientation of sigma1 rotates relative to bedding repeatedly during pulse of flexural slip.	We fully agree and we discussed this at end of the discussion: *The close link between flexural-slipping and stress reorientation also implies that the amount of deflection of the maximum compressive stress scales with the amount of flexural-slipping. Accordingly, if the growth of an anticline occurs in a discontinuous fashion, the orientation of maximum compressive stress is expected to rotate repeatedly during the repeated pulses of flexural slip. In the case documented here, the absence of any indicators of a sub-horizontal maximum stress could be related to the fact that andersonian stress configuration would characterise stages in which the maximum stress is low and in a sub-critical state, not allowing faulting and folding. Repeated pulses of maximum stress increase would instead cause the progressive slipping of bedding surfaces, with the consequent maximum stress deflection.*