

HOURLGLASS STRUCTURE: AN EVIDENCE OF BUCKLE FOLDING by
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The authors describe branching of an anticline (Fig.2b) through propagation of two out-of-phase fold waves towards each other (Figs.4 d,e). In this case, the branching should be in opposite direction for the adjacent anticline. I would like to know whether they have seen any other anticline in the nearby area where branching is in SW direction.

I have seen number of mega folds in 'Tertiary Fold Belt' of Cachar (Assam) and Mizoram, where these folds branch out in one direction (e.g. Fig.3 of Srinivasan, 2005). I do not think that out-of-phase folding can explain this type of branching in one direction. It can be better explained through difference in competency of rocks involved in the folding as shown below (Fig.1).

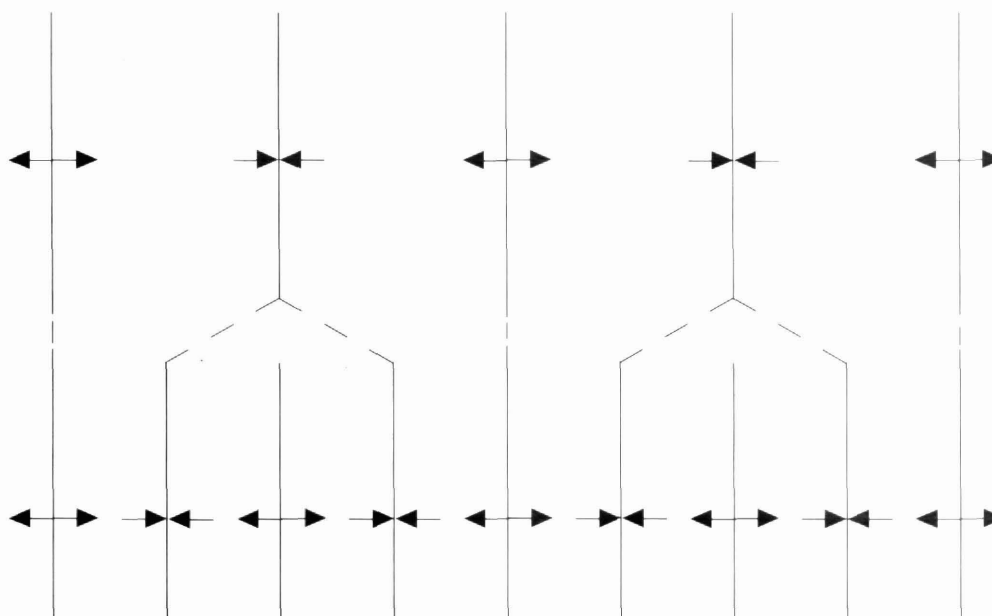


Fig.1. Schematic plan. Branching in same direction can be explained through in-phase-folding. In the lower part of the figure, the wave length is shorter than that of the upper part of the figure and this can be due to variation in competency of rocks involved in folding.

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Yes! There are anticlinal hinge lines that show branching in SW direction in the nearby area (Fig.1, after Sahay, 2005).

Structural geologists have long been aware of hinge line branching due to buckling (Ghosh and Ramberg, 1968; Dubey and Cobbold, 1977; Prince and Cosgrove, 1990, p.265). But the notion that branching occurs due to difference in competency contrast in the same layer, as shown in Fig.1 in Srinivasan (2006) is not yet known.

Hinge lines, in Srinivasan's model (Fig.1 in Srinivasan, 2006), branch out in situation where a coplanar pair of anticline and syncline propagate towards each other. Yet, he terms this as in-phase folding? This, indeed, is opposite to standard definition of in-phase folding (see Fig.10.55 in Price and Cosgrove, 1990, p.266).

It is not possible for us to comment on the mechanism of hinge line branching in the Tertiary fold belt of Assam and Mizoram, deciphered by Srinivasan (2005), through remote sensing technique. We, however, look forward to educate ourselves with the new theories on mechanism of hinge line branching.

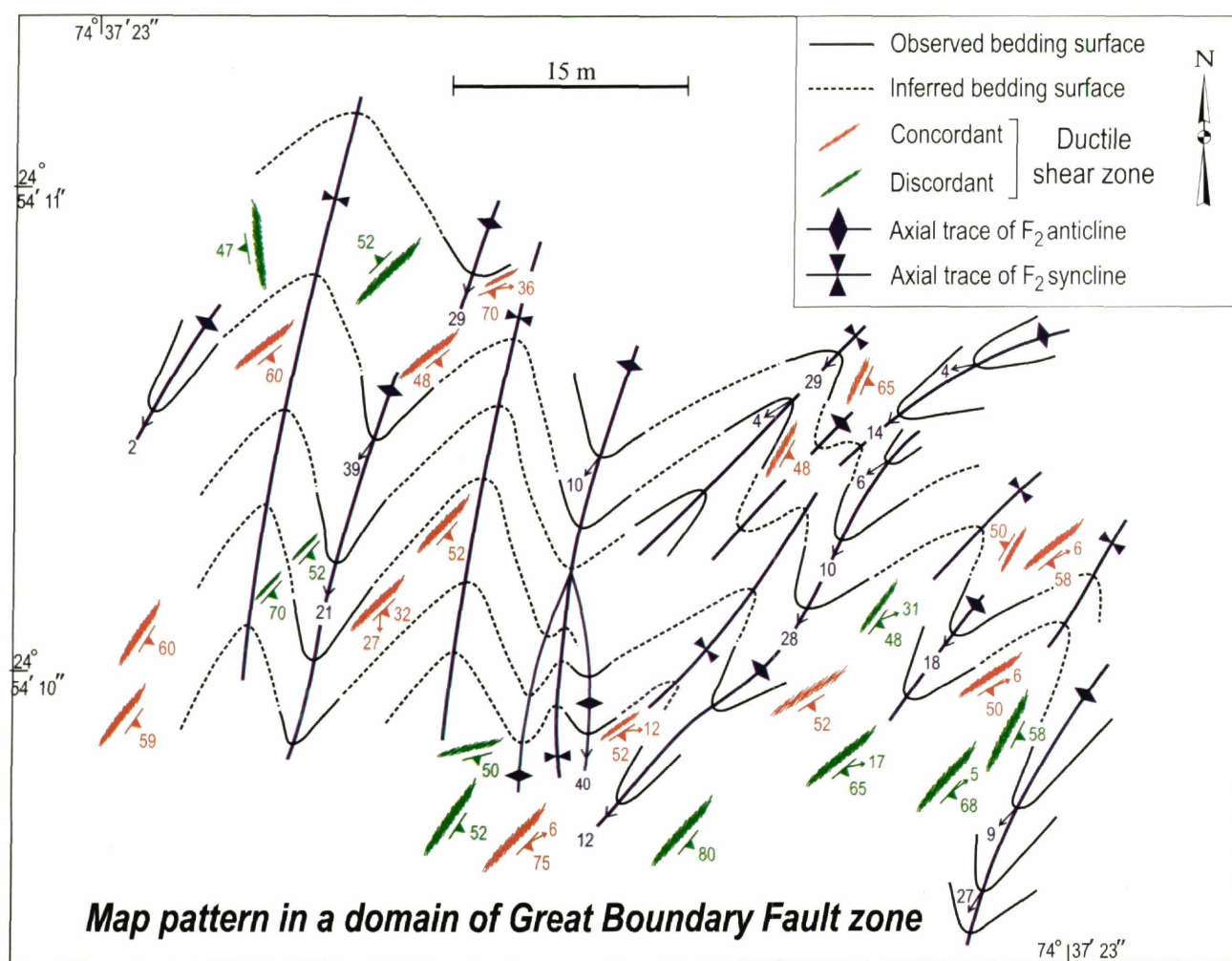


Fig.1. An example of SW branching of hinge line of folds in the Great Boundary Fault Zone in the Berach river section, Rajasthan.

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