

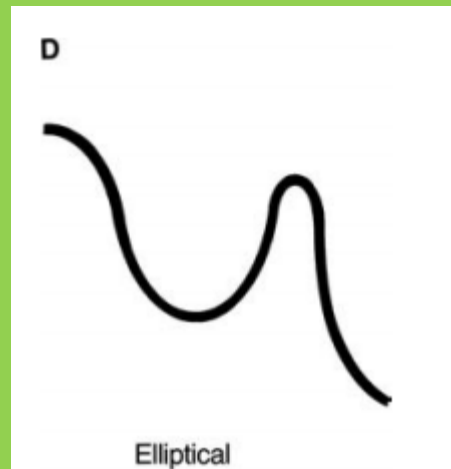
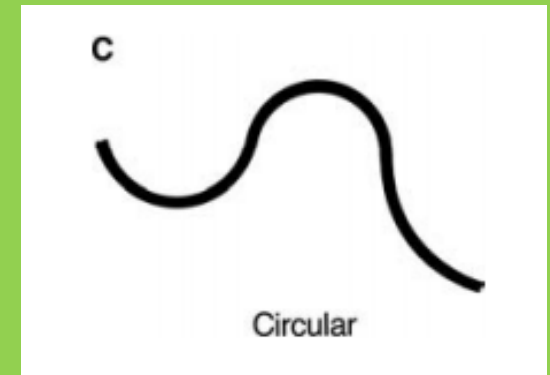
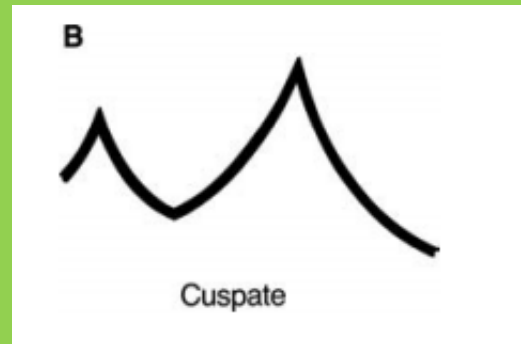
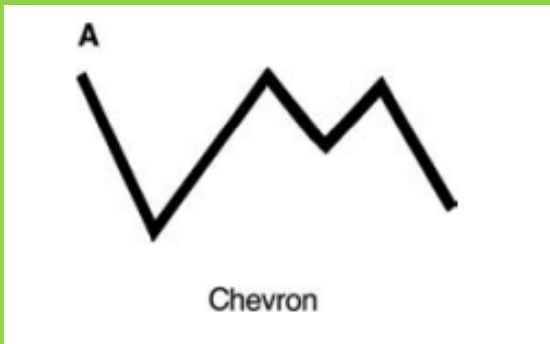
Structural Geology and Structural Analysis

The Earth is a Dynamic Planet.

Shape of a Folded Surface

A chevron fold, for example, is marked by planar limbs that meet at a discrete hinge point or at a very restricted sub angular hinge zone.

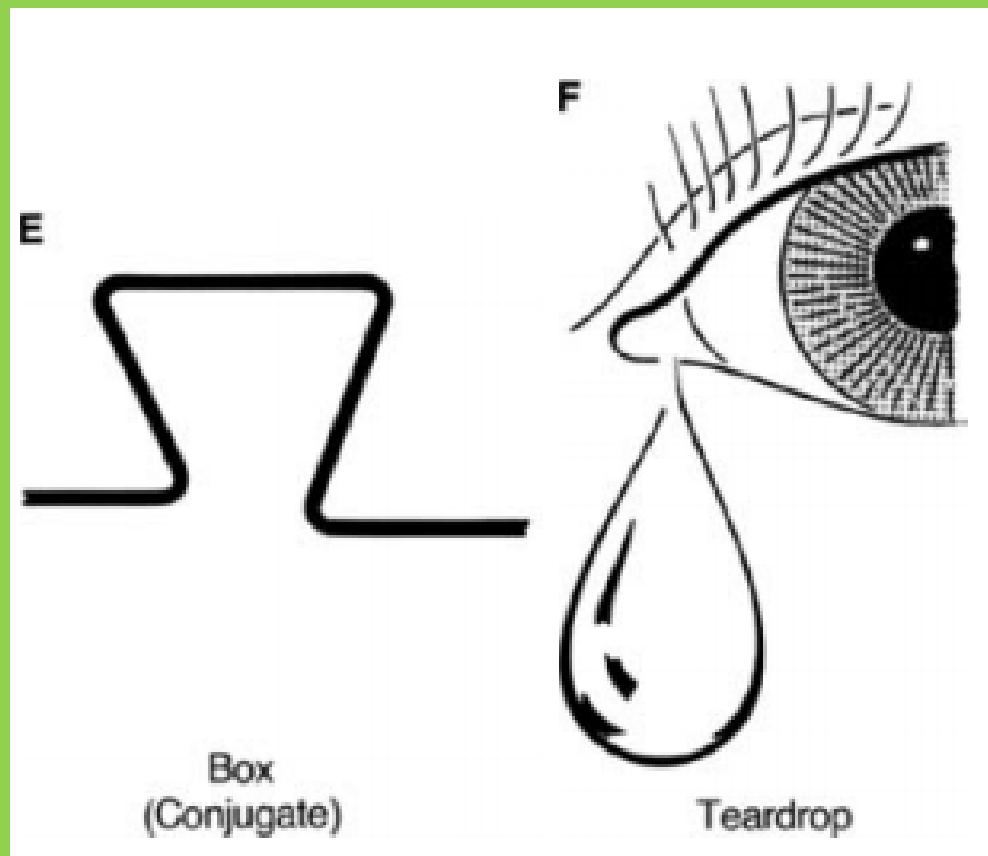
A cusperate fold exhibits curved limbs that are opposite in sense of curvature to those of most ordinary folds .



Some folded surfaces have two hinges. *Box folds* (or conjugate folds) are composed of three planar limbs connected by hinge points or narrow, restricted sub angular hinge zones. Upright box folds are characterized by flat crests.

T

teardrop folds are continuously curved folded surfaces shaped, like teardrops.



Classification of Folds

The classification of folds is based on:

- Appearance in cross section
- Symmetry of fold
- Thickness of limb
- Interlimb angle
- Attitude of folding

Appearance in cross section

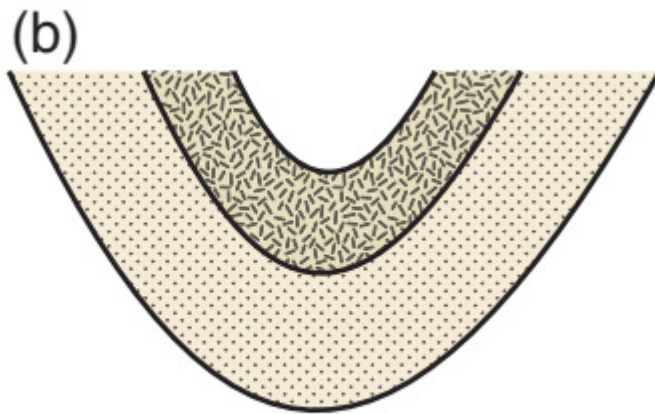
An antiform is a structure where the limbs dip down and away from the hinge zone.

Or

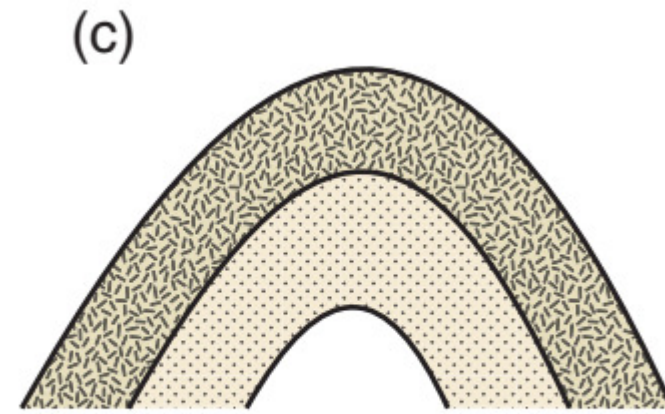
Folds that close upwards, that is where the limbs dip away from the hinge, are termed antiforms

Synform is the opposite of antiform, trough-like shape . that close downwards, where the limbs dip towards the hinge, are termed **synforms**

Stratigraphy
unknown

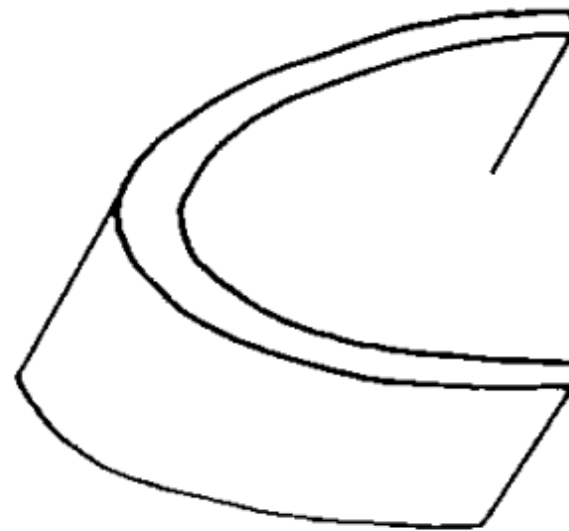


Synform



Antiform

Folds that close sideways
are termed **neutral folds**

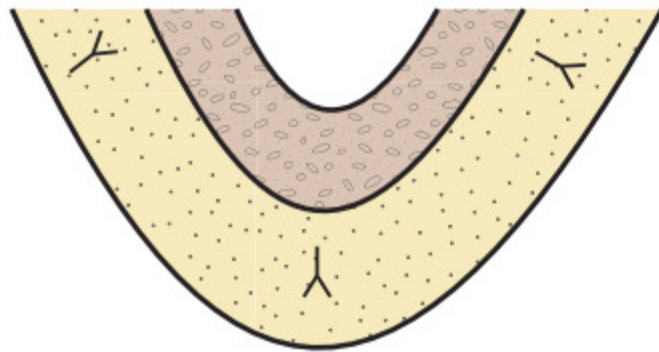


C neutral fold

Where a stratigraphy is given, an antiform is called an anticline where the rock layers get younger away from the axial surface of the fold (a fold with older rocks in its core).

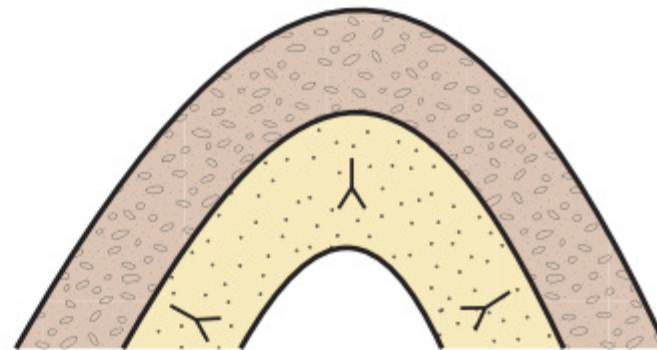
Similarly, a syncline is a trough-shaped fold where layers get younger toward the axial surface (a fold that contains younger rocks in its core) .

(d)



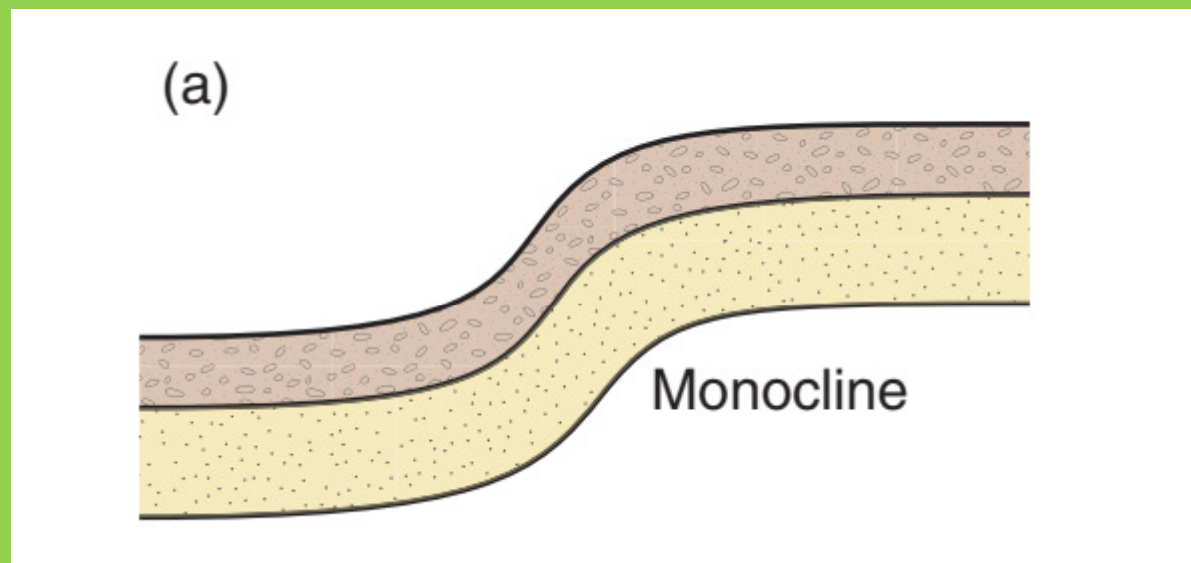
Syncline

(e)



Anticline

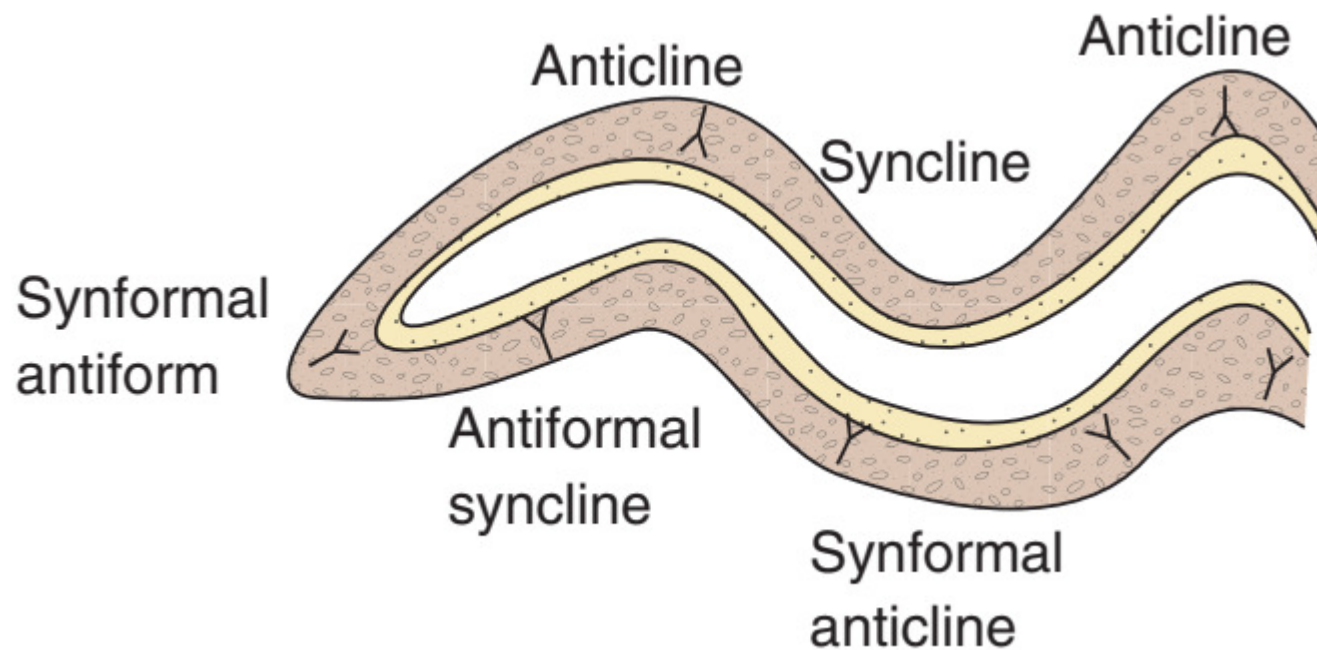
A monoclinial fold is a sub-cylindrical fold with only one inclined limb.



A synformal anticline is an anticline because the strata get younger away from its axial surface. At the same time, it has the shape of a synform, i.e. it is synformal.

Similarly, an antiformal syncline is a syncline because of the stratigraphic younging direction, but it has the shape of an antiformal.

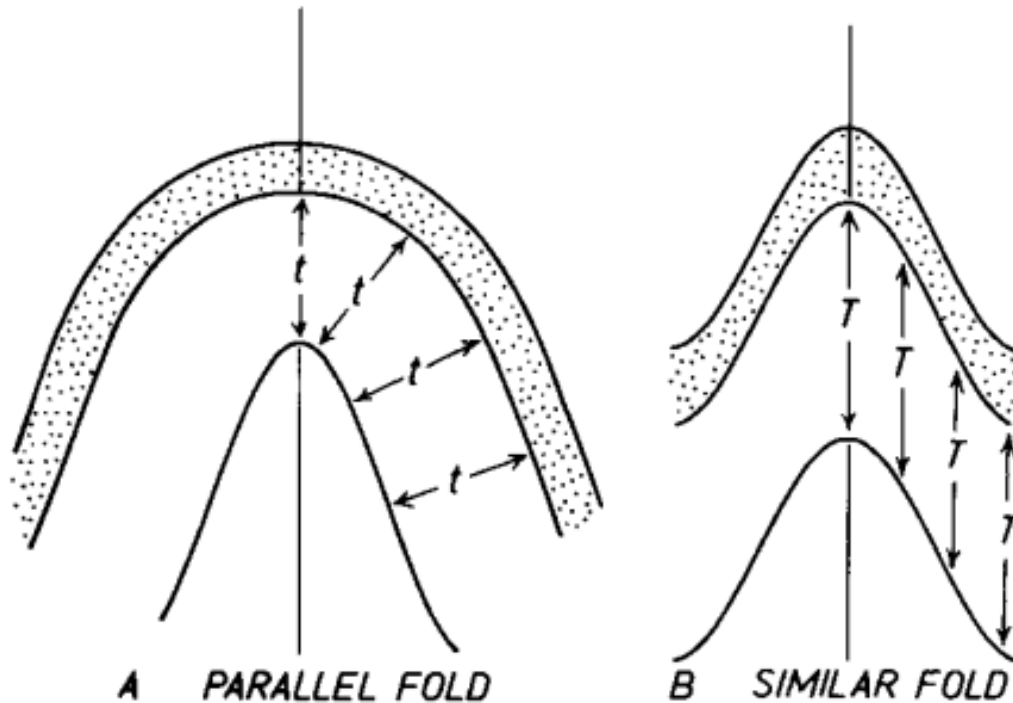
(h)



Thickness of limb

Parallel folds : constant bed (stratigraphic) thickness.

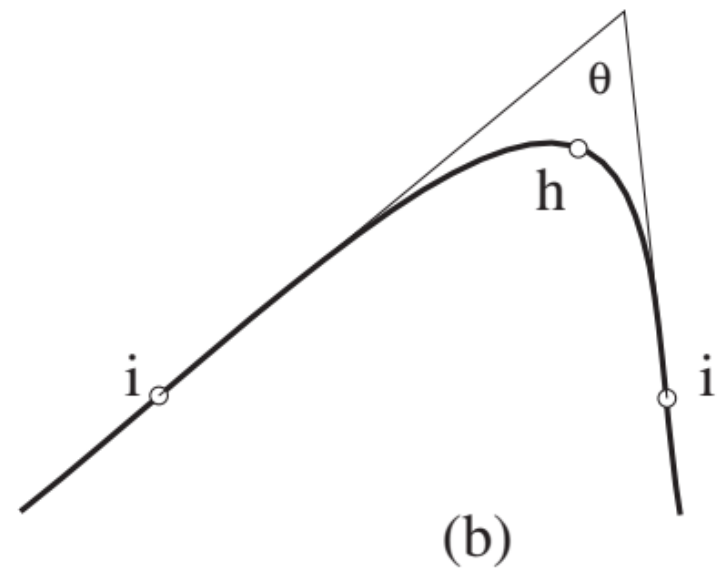
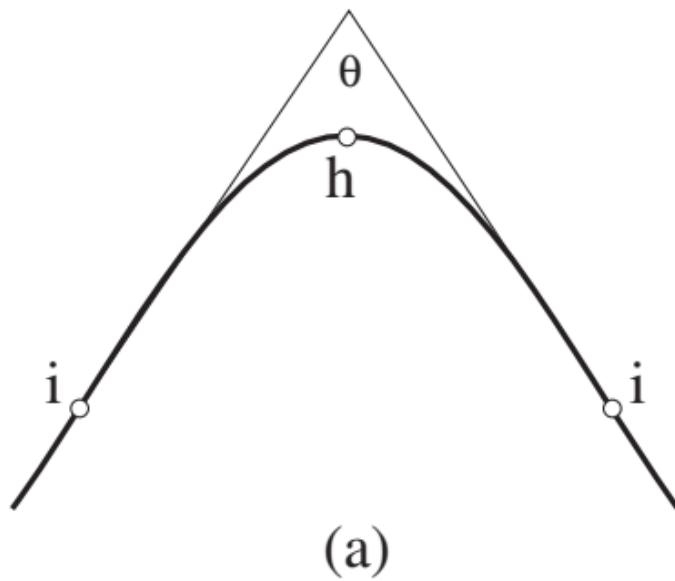
Similar folds : folds the stratigraphic thickness is greater at the hinge than on the limbs, though the bed thickness is constant if measured in a direction parallel to the axial surface and lower surfaces of the bed have identical shapes.



Interlimb angle

An important character of fold shape is the *interlimb angle* θ , defined as the minimum angle between the limbs as measured in the profile plane, or, alternatively, between the lines tangent to the curve at the inflection points. This angle describes the *tightness* of the fold.

The terms *gentle*, *open*, *close*, *tight*, *isoclinal* and *mushroom (or elastica)* are commonly used.



Interlimb angle	Descriptive term
$180^{\circ}-120^{\circ}$	Gentle
$120^{\circ}-70^{\circ}$	Open
$70^{\circ}-30^{\circ}$	Close
$30^{\circ}-0^{\circ}$	Tight
0°	Isoclinal
Negative angles	Mushroom
