Types of Folds and Faults
Paper- GGRM 101T4(Geomorphology)

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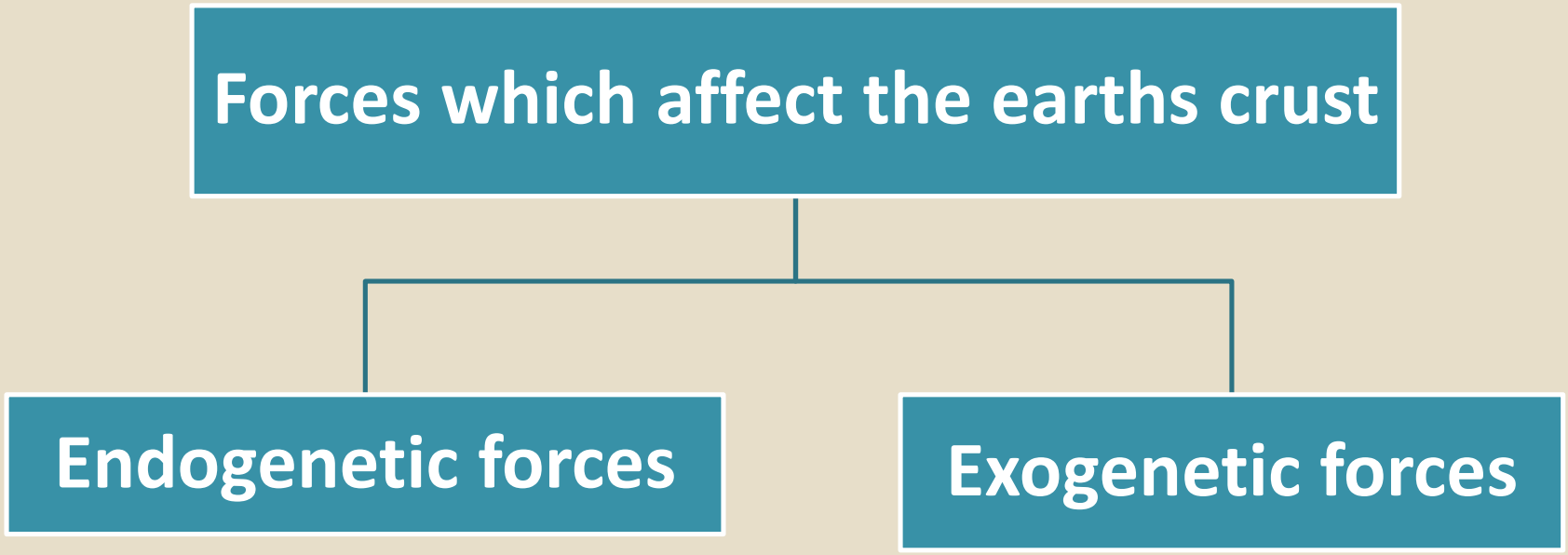
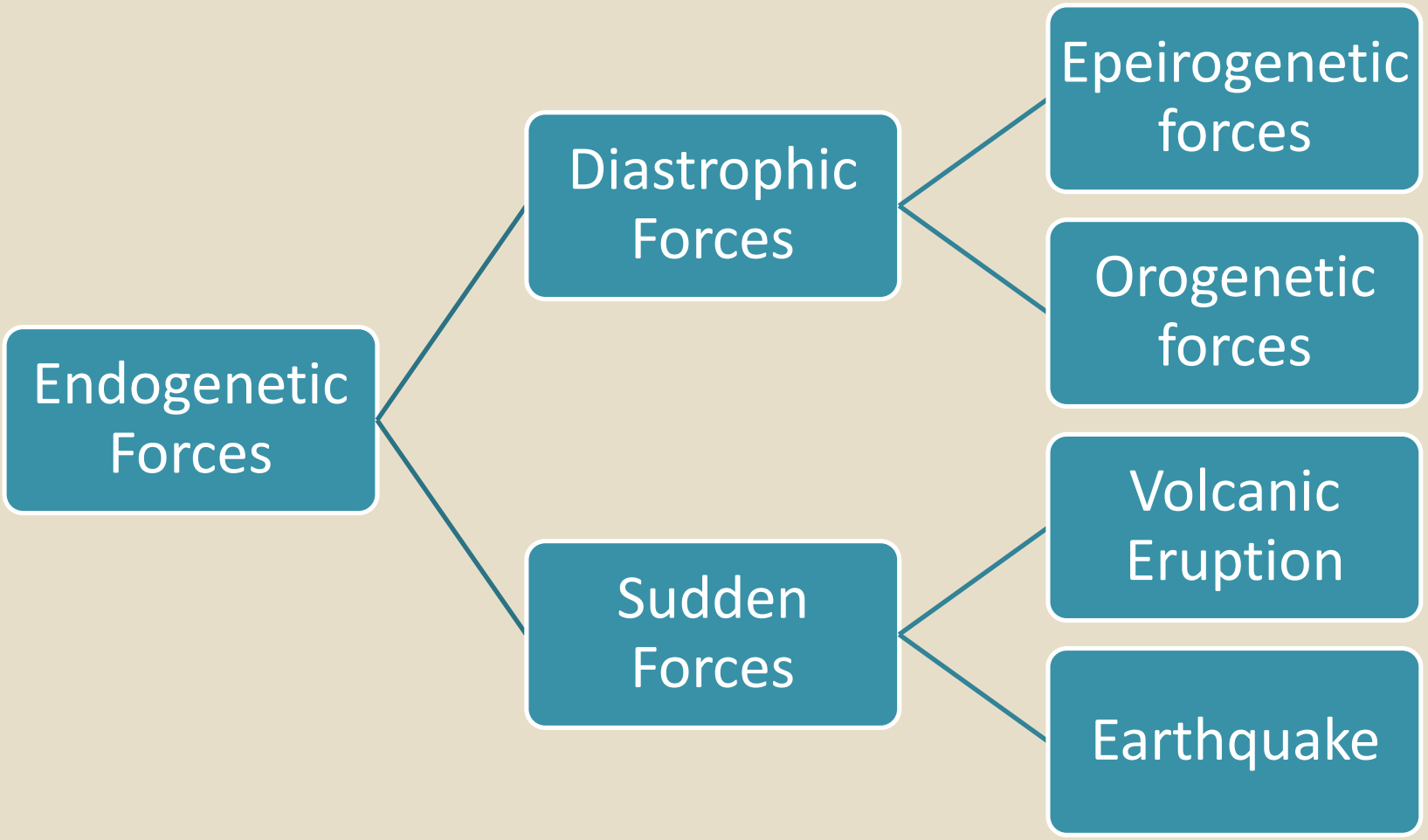
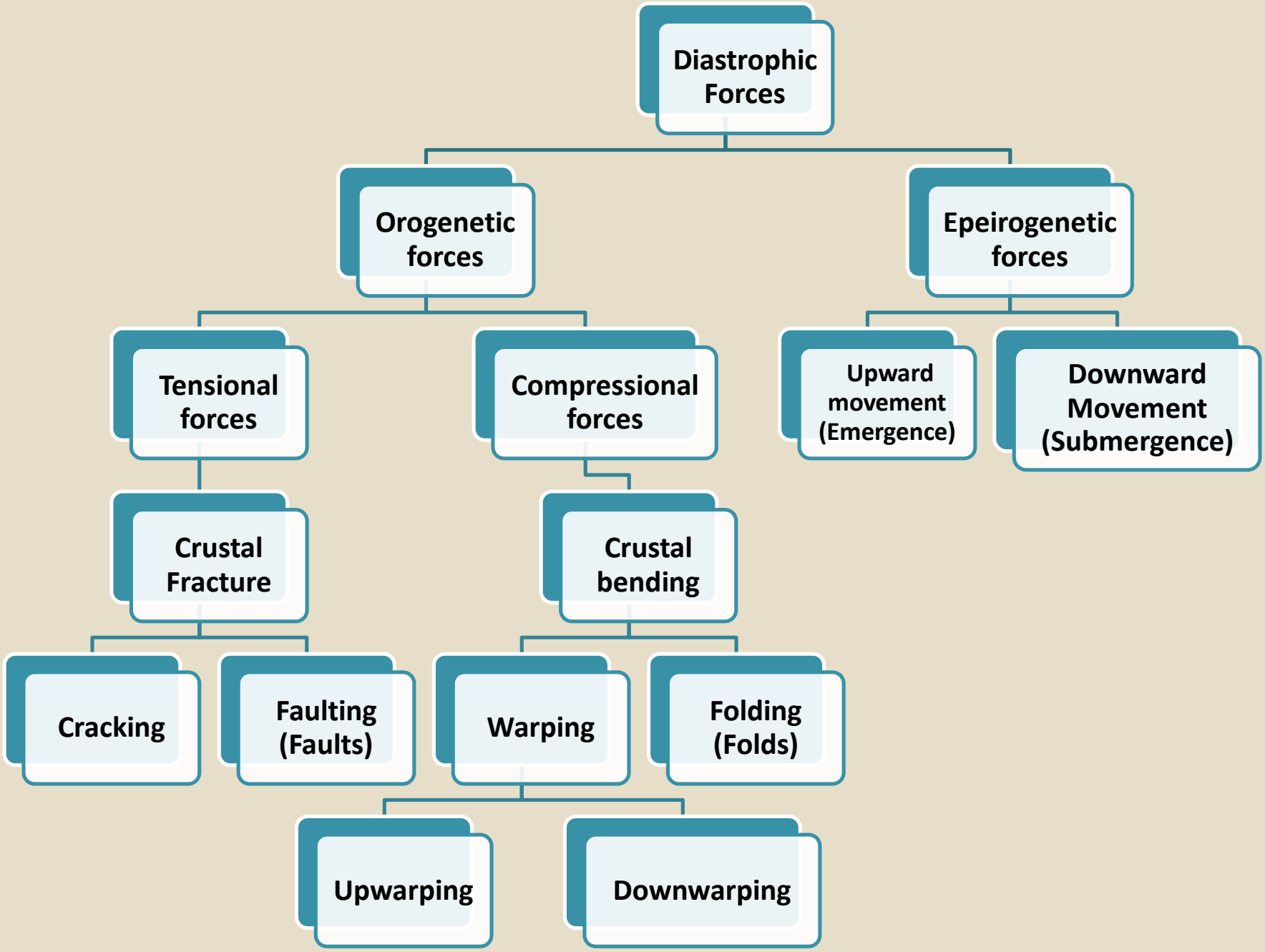
Forces responsible for landform development




Endogenetic Forces
Diastrophic Forces
Sudden Forces
Epeirogenetic forces
Orogenetic forces
Volcanic Eruption
Earthquake


Diastrophic Forces
Orogenetic forces
Epeirogenetic forces
Tensional forces
Compressional forces
Upward movement (Emergence)
Downward Movement (Submergence)
Crustal Fracture
Crustal bending
Cracking
Faulting (Faults)
Warping
Folding (Folds)
Upwarping
Downwarping

What is fold?

Wave-like bends formed in the crustal rocks due to tangential compressive force resulting from horizontal movement caused by the endogenetic force originating deep within the earth are called folds.

Different components of fold

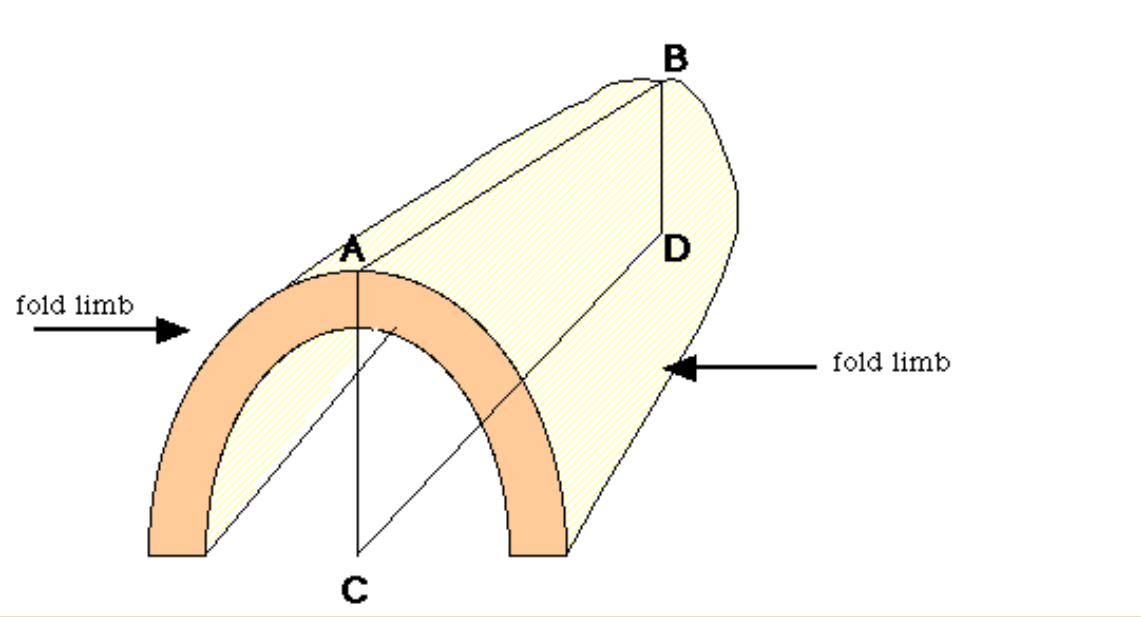
The upfolded rock strata in arch-like form are called anticlines.

Different components of fold

The down folded structure forming trough-like feature is called synclines.

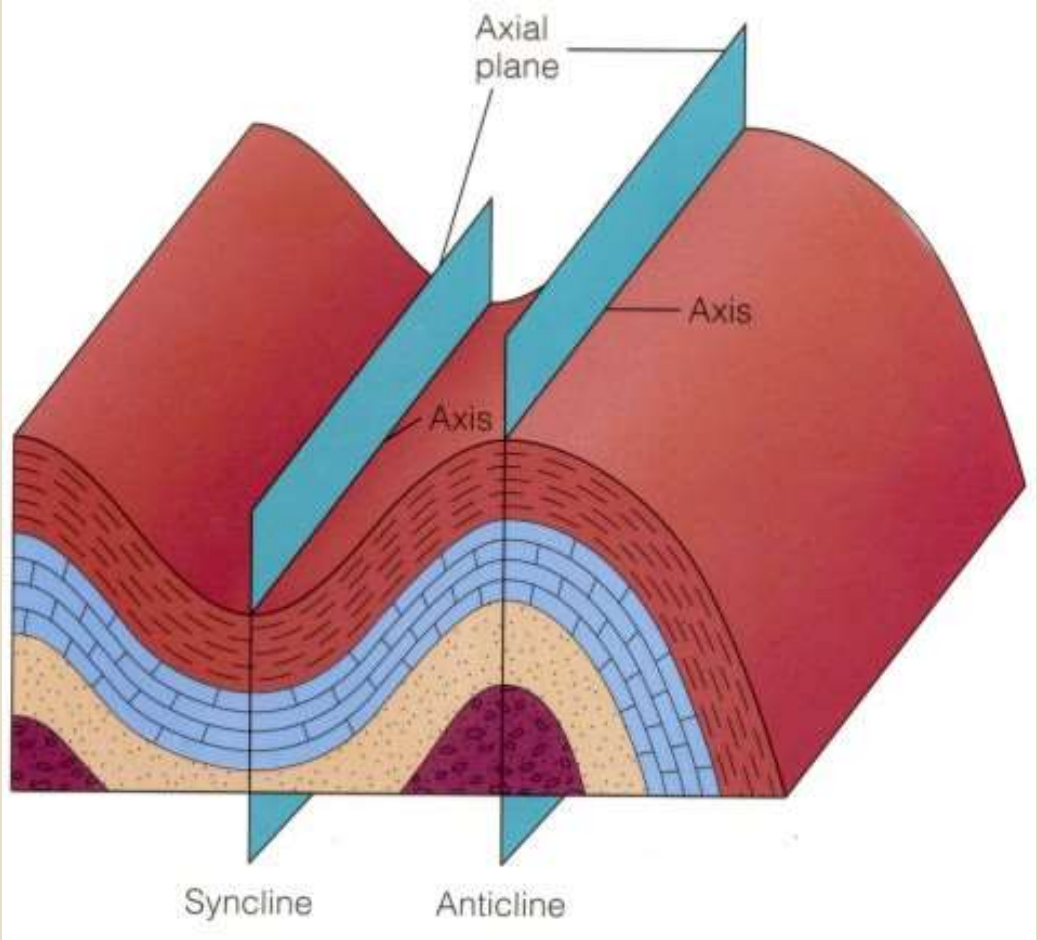
Different components of fold

The two sides of a fold are called limbs of the fold.



Different components of fold

- The plane which bisects the angle between two limbs of the anticline or middle limb of the syncline is called the axis of fold or axial plane.
- On the basis of anticline and syncline these axial planes are called as axis of anticline and axis of syncline



Dip and Strike

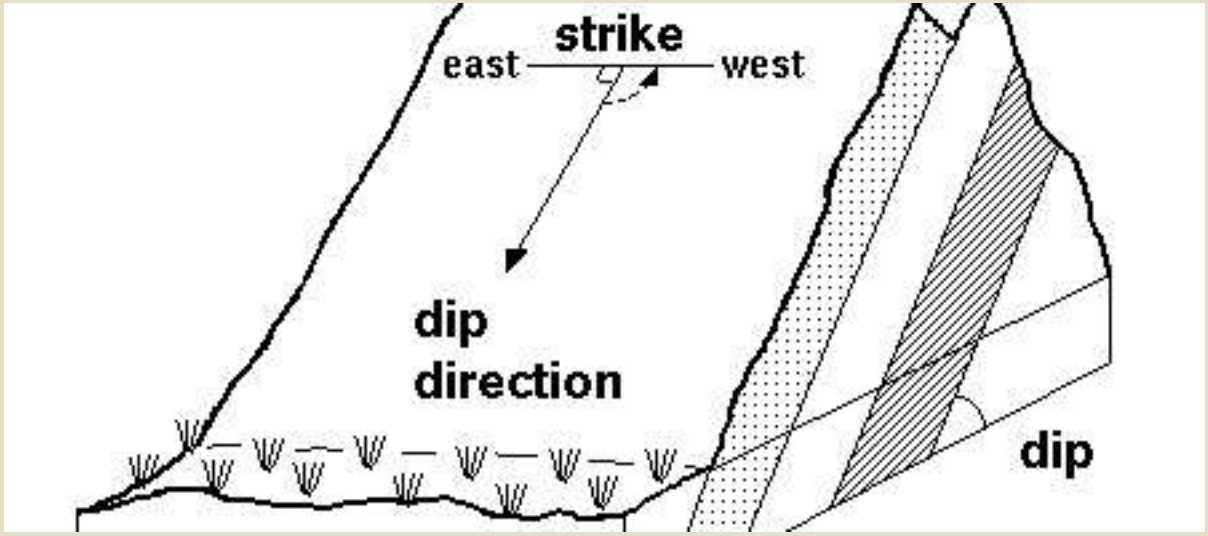
The inclination of rock beds with respect to horizontal plane is termed as dip.

Dip is important as it gives the following information:

- The direction of maximum slope down a bedding plane
- The angle between the maximum slope and the horizontal plane

Dip and Strike

- The strike of an inclined bed is the direction of any horizontal line along a bedding plane.
- The direction of dip is always at right angle to the strike.



Types of fold

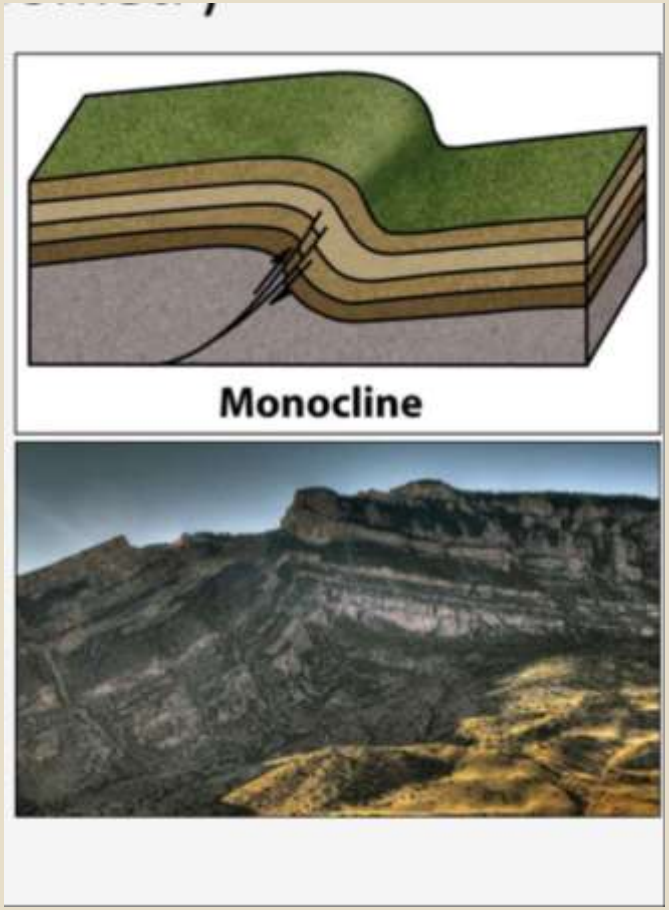
Symmetrical fold

Types of fold

Asymmetrical fold

Types of fold

Monoclinal fold



Types of fold

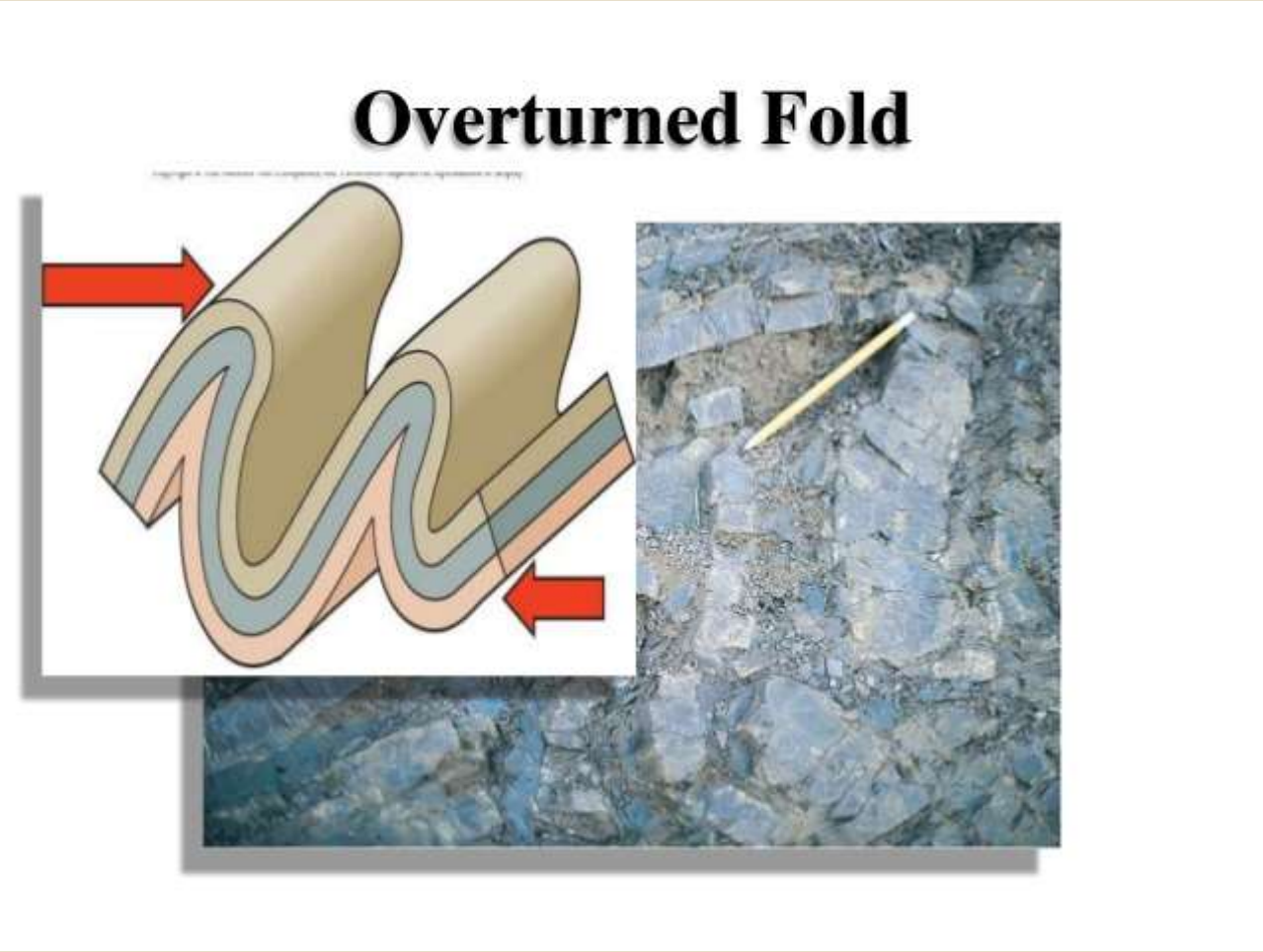
Isoclinal Fold

Types of fold

Recumbent Fold

Types of fold

Overturned Fold



Types of fold

Plunge Fold

Types of fold

Fan Fold

Types of fold

Open Fold

Types of fold

Closed Fold

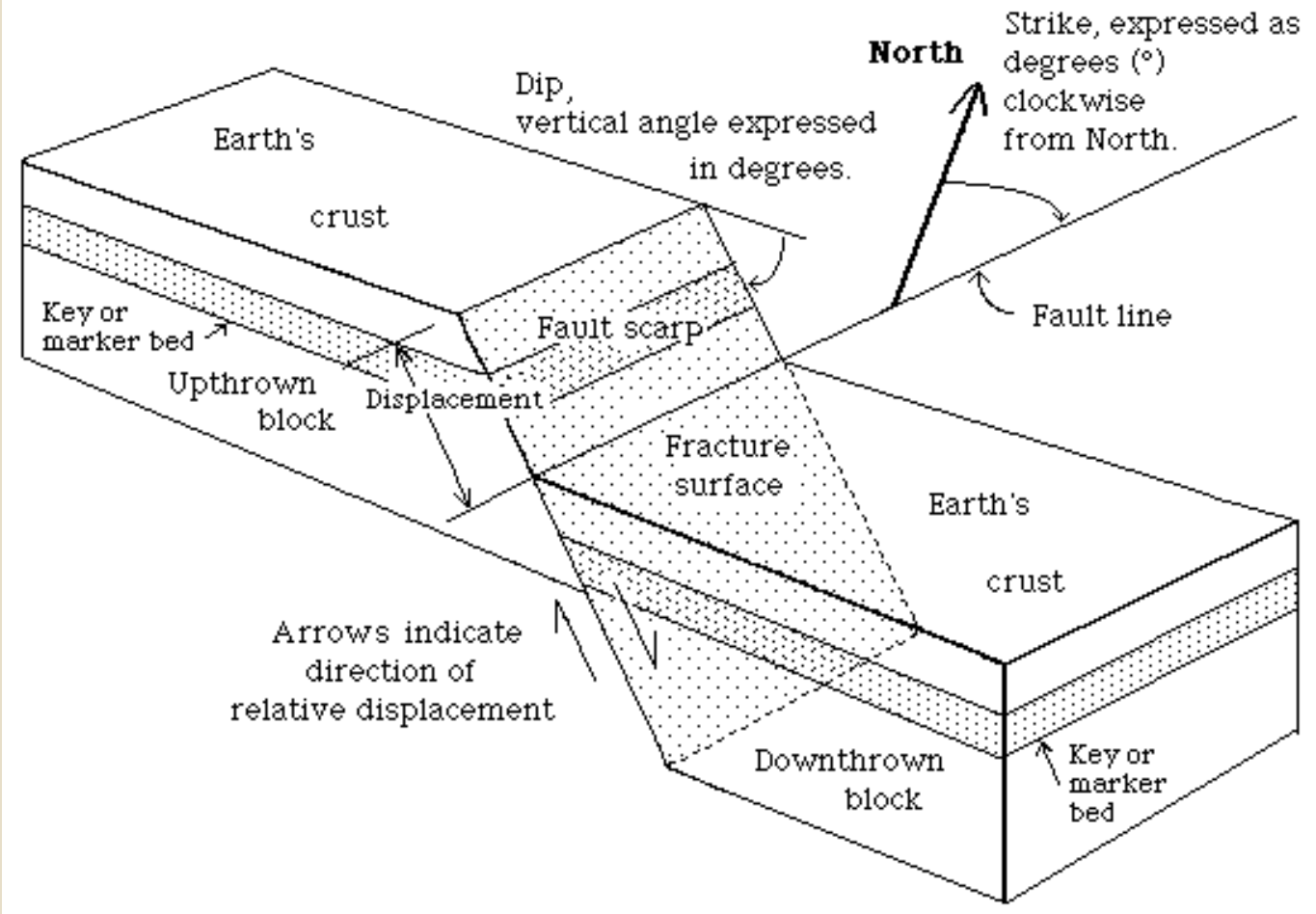
What is Fault

When the crustal rocks are displaced due to tensional movement caused by the endogenetic forces, along a plane the resultant structure is called a fault.

Different parts of Fault

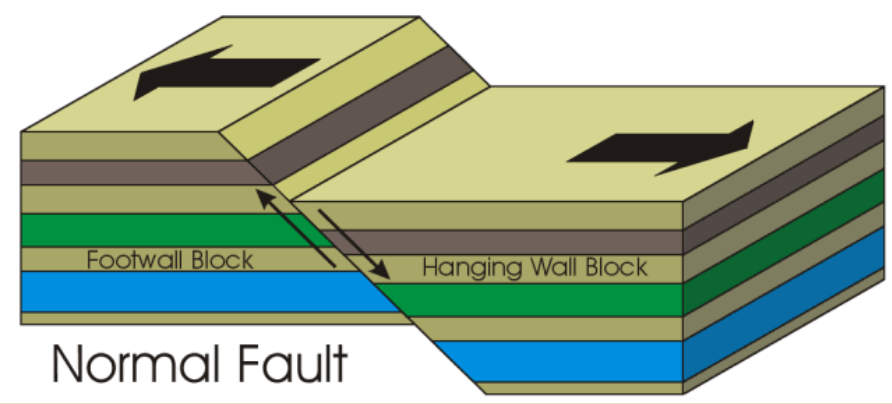
- The plane along which the rock blocks are displaced is called fault plane.
- The angle between the fault plane and horizontal plane is termed as fault dip.
- Uppermost block of a fault is called upthrown side
- Lowermost block of a fault is called downthrown side.
- Upper wall of a fault is known as hanging wall.
- Foot wall represents the lower wall of a fault.
- The steep wall-like slope caused by faulting of the crustal rocks is called as fault scarp.

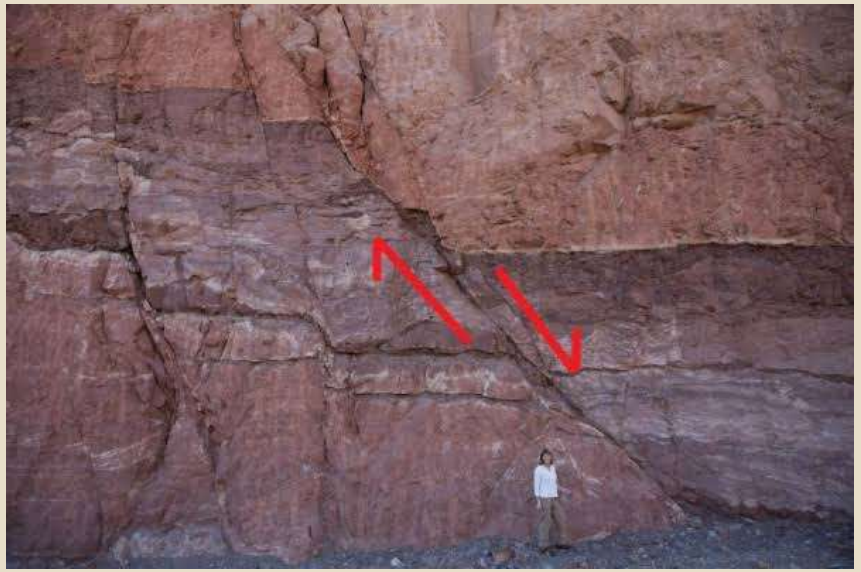
Different parts of Fault



Types of Faults:

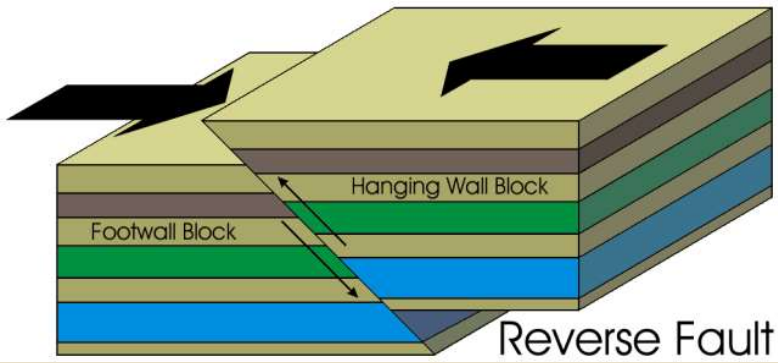
Normal Faults are formed due to the displacement of both the rock blocks in opposite directions due to fracture upon greatest stress.





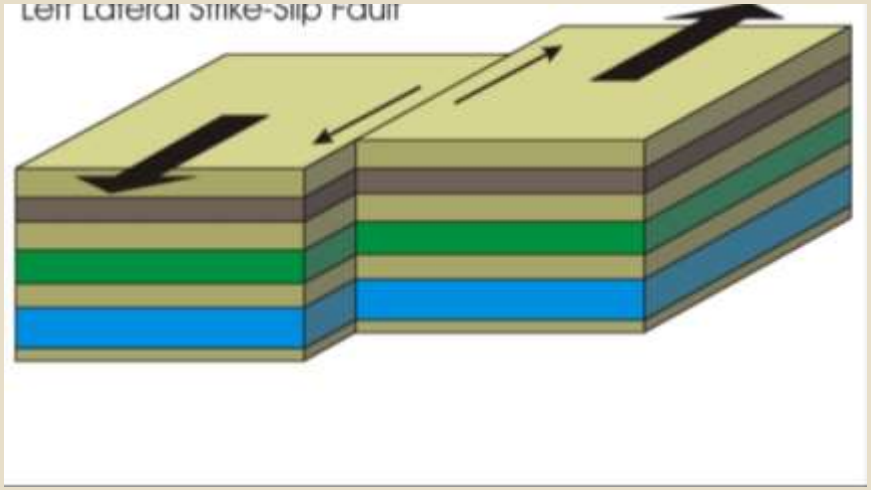
Types of Faults:

Reverse Faults are formed due to the movement of both the fractured rock blocks towards each other.



Types of Faults:

Strike-slip Faults are formed when the rock blocks are displaced horizontally along the fault plane due to horizontal movement.



Types of Faults:

Step Faults are a series of faults occur in any area in such a way that the slops of all the fault planes of all the faults are in the same direction.

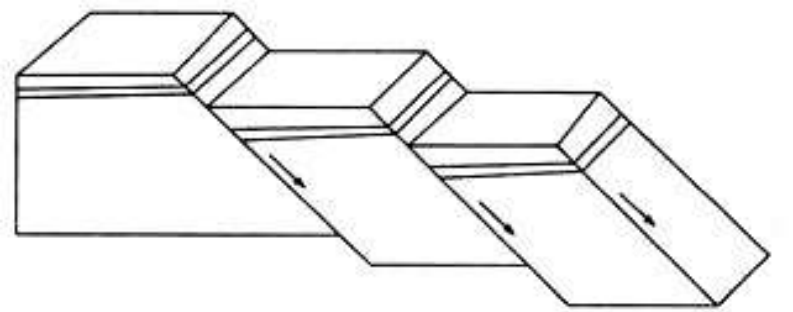


Fig. 17.33 Step fault

Thank you