

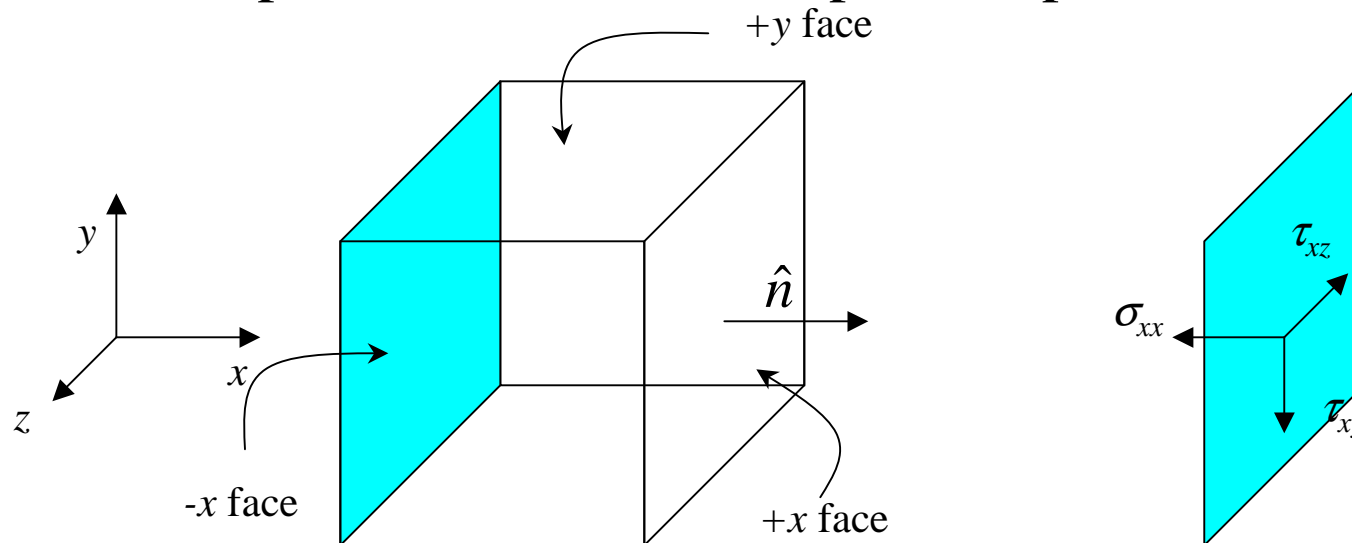
Fluid Element Stress Field

Notation & Sign Convention

1. τ_{fd} – the first subscript denotes the face the stress is acting on and the 2nd subscript the direction.

Example: τ_{zy} is a shear stress acting on the z face in the y direction

2. Planes – sign convention: if the outwardly pointing normal is in the positive direction, the plane is positive.

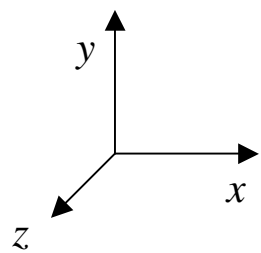
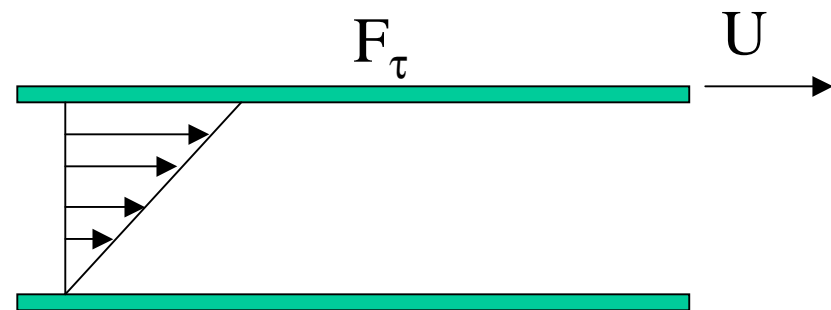


Fluid Element Stress Field

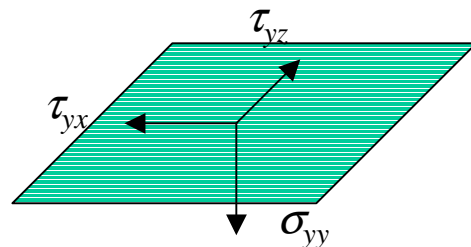
Notation & Sign Convention

3. Stress Sign Convention – a stress component is positive if both the stress component and plane on which it acts are positive.

Determine the direction of shear stress on the upper & lower plate

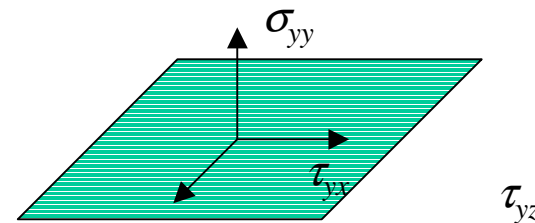


Stresses on Top Plate



- y face

Stresses on Lower Plate



+ y face