

THEORY

When a body is placed in a liquid, it experiences an upward force called buoyant force. This force is equal to the weight of the liquid displaced by the body. This is known as Archimedes' principle. The buoyant force acts through the center of buoyancy, which is the center of mass of the displaced liquid. The weight of the body acts through its center of mass. If the center of buoyancy is above the center of mass, the body is stable. If the center of buoyancy is below the center of mass, the body is unstable. If the center of buoyancy and the center of mass coincide, the body is in neutral equilibrium.

Condition	Stability
Center of buoyancy is above the center of mass	Stable
Center of buoyancy is below the center of mass	Unstable
Center of buoyancy and center of mass coincide	Neutral

DISCUSSION

