

THEORY

When a body is placed in a fluid, it experiences an upward force known as buoyant force. This force is equal to the weight of the fluid 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 fluid. The weight of the body acts through its center of mass. If the center of buoyancy is above the center of mass, the body will be stable. If the center of buoyancy is below the center of mass, the body will be unstable. If the center of buoyancy and the center of mass coincide, the body will be 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 equilibrium

EXPERIMENT

