

General Relativity

Physics

Gravity as geometry rather than force.

The core ideas and their tests.

The idea

Gravity is spacetime curvature, not a force

Free fall is motion along a geodesic

The equivalence principle: gravity equals acceleration

Energy and momentum curve spacetime

Confirmed by

Mercury's perihelion precession

Light bending near the Sun, 1919

Gravitational redshift

Gravitational waves, LIGO 2015

Black hole imaging, 2019

The equivalence principle is the starting point: inside a sealed lift, gravity and acceleration cannot be distinguished.