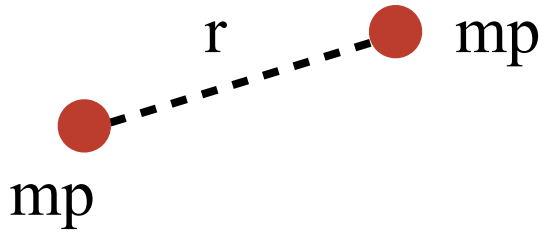
EM and Gravitation Interactions



Electromagnetic Energy

$$E = -\underbrace{\frac{e^2}{4\pi}}\,\frac{1}{r}$$

GeV GeV

Pure number: α
Its small: 1/137

Gravitational Energy

$$E = -\underbrace{G_N}\,\frac{m_p^2}{r}$$

GeV GeV^3

Dimensionful number

$$G_N m_p^2 = 10^{-39}$$