

STANDARD MODEL OF ELEMENTARY PARTICLES

QUARKS

UP
 mass $2,3 \text{ MeV}/c^2$
 charge $\frac{2}{3}$
 spin $\frac{1}{2}$
u

CHARM
 mass $1,275 \text{ GeV}/c^2$
 charge $\frac{2}{3}$
 spin $\frac{1}{2}$
c

TOP
 mass $173,07 \text{ GeV}/c^2$
 charge $\frac{2}{3}$
 spin $\frac{1}{2}$
t

DOWN
 mass $4,8 \text{ MeV}/c^2$
 charge $-\frac{1}{3}$
 spin $\frac{1}{2}$
d

STRANGE
 mass $95 \text{ MeV}/c^2$
 charge $-\frac{1}{3}$
 spin $\frac{1}{2}$
s

BOTTOM
 mass $4,18 \text{ GeV}/c^2$
 charge $-\frac{1}{3}$
 spin $\frac{1}{2}$
b

LEPTONS

ELECTRON
 mass $0,511 \text{ MeV}/c^2$
 charge -1
 spin $\frac{1}{2}$
e

MUON
 mass $105,7 \text{ MeV}/c^2$
 charge -1
 spin $\frac{1}{2}$
 μ

TAU
 mass $1,777 \text{ GeV}/c^2$
 charge -1
 spin $\frac{1}{2}$
 τ

ELECTRON NEUTRINO
 mass $<2,2 \text{ eV}/c^2$
 charge 0
 spin $\frac{1}{2}$
 ν_e

MUON NEUTRINO
 mass $<0,17 \text{ MeV}/c^2$
 charge 0
 spin $\frac{1}{2}$
 ν_μ

TAU NEUTRINO
 mass $<15,5 \text{ MeV}/c^2$
 charge 0
 spin $\frac{1}{2}$
 ν_τ

GAUGE BOSONS

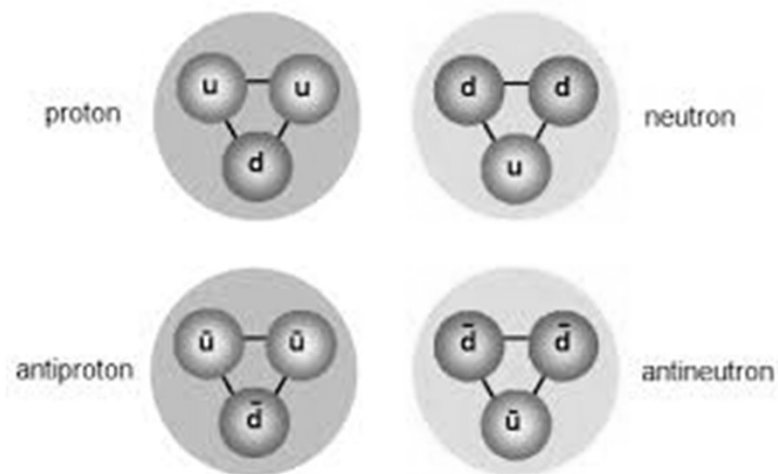
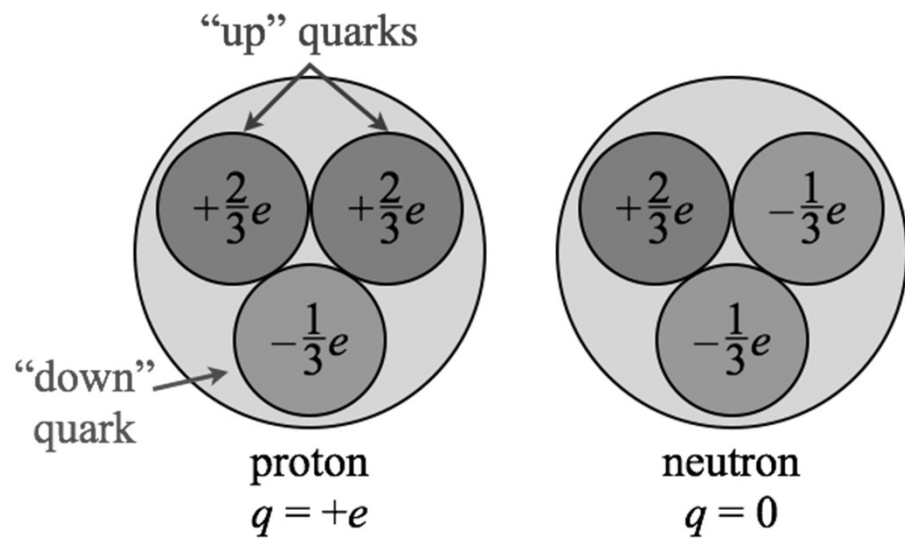
GLUON
 mass 0
 charge 0
 spin 1
g

HIGGS BOSON
 mass $126 \text{ GeV}/c^2$
 charge 0
 spin 0
H

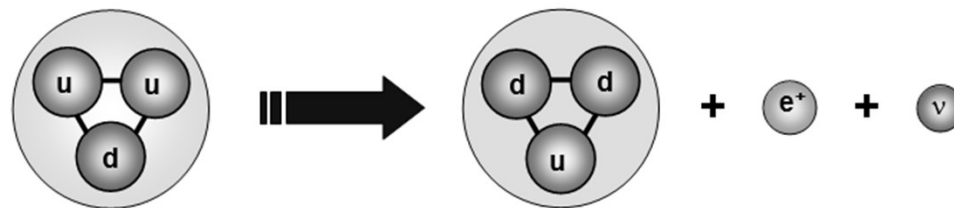
PHOTON
 mass 0
 charge 0
 spin 1
 γ

Z BOSON
 mass $91,2 \text{ GeV}/c^2$
 charge 0
 spin 1
Z

W BOSON
 mass $80,4 \text{ GeV}/c^2$
 charge ± 1
 spin 1
W



Beta⁺ decay: $p \rightarrow n + \beta^+ + \nu$



Beta⁻ decay: $n \rightarrow p + \beta^- + \bar{\nu}$

