QUARKS

The *u*-, *d*-, and *s*-quark masses are estimates of so-called "current-quark masses," in a mass-independent subtraction scheme such as $\overline{\text{MS}}$ at a scale $\mu \approx 1$ GeV. The *c*- and *b*-quark masses are estimated from charmonium, bottomonium, *D*, and *B* masses. They are the "running" masses in the $\overline{\text{MS}}$ scheme. These can be different from the heavy quark masses obtained in potential models.

u

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

Mass $m = 2$ to 8 MeV [j] Charge $= \frac{2}{3}\ e$ $I_z = +\frac{1}{2}$
$m_u/m_d = 0.25$ to 0.70

d

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

Mass $m = 5$ to 15 MeV [j] Charge $= -\frac{1}{3}\ e$ $I_z = -\frac{1}{2}$
$m_s/m_d = 17$ to 25

s

$I(J^P) = 0(\frac{1}{2}^+)$

Mass $m = 100$ to 300 MeV [j] Charge $= -\frac{1}{3}\ e$ Strangeness $= -1$
$(m_s - (m_u + m_d)/2)/(m_d - m_u) = 34$ to 51

c

$I(J^P) = 0(\frac{1}{2}^+)$

Mass $m = 1.0$ to 1.6 GeV Charge $= \frac{2}{3}\ e$ Charm $= +1$

b

$I(J^P) = 0(\frac{1}{2}^+)$

Mass $m = 4.1$ to 4.5 GeV Charge $= -\frac{1}{3}\ e$ Bottom $= -1$