Unit 3: Electrostatics

Particle		Mass (kg)	Charge (C)
n^0	neutron	1.67×10^{-27}	0
p^+	proton	1.67×10^{-27}	$+1.6 \times 10^{-19}$
e^-	electron	9.11×10^{-31}	-1.6×10^{-19}

$k = 9 \times 10^9\ N \cdot m^2/C^2$ $\quad 1\ \mu C = 1 \times 10^{-6}\ C$ $\quad atomic\ \# = \#\ protons\ in\ nucleus$

$$F_g = \frac{G \cdot m_1 \cdot m_2}{r^2} \qquad F_e = \frac{k|q_1 \cdot q_0|}{r^2}$$

$$\vec{E} = \frac{k \cdot q_1}{r^2} \qquad F_e = q_0 \cdot \vec{E} \qquad V = \frac{k \cdot q_1}{r}$$

$$PE_e = KE = \frac{1}{2} m \cdot v^2 \qquad W = PE_e = q_0 \cdot \Delta V = \frac{k|q_1 \cdot q_0|}{r}$$