

# Potential for Point charges

Electric potential a distance  $r$  from a charge  $q$ :

$$V \equiv U_E/q \quad V = k \frac{q}{r}$$

Example

What is the electric potential a distance  $r = 0.53 \times 10^{-10}$  m from a proton? (Let  $V(\infty) = 0$ )

$$V = U_E/q = k q / r = (9 \times 10^9)(1.6 \times 10^{-19}) / 0.53 \times 10^{-10} = 27.2 \text{ Volts}$$

