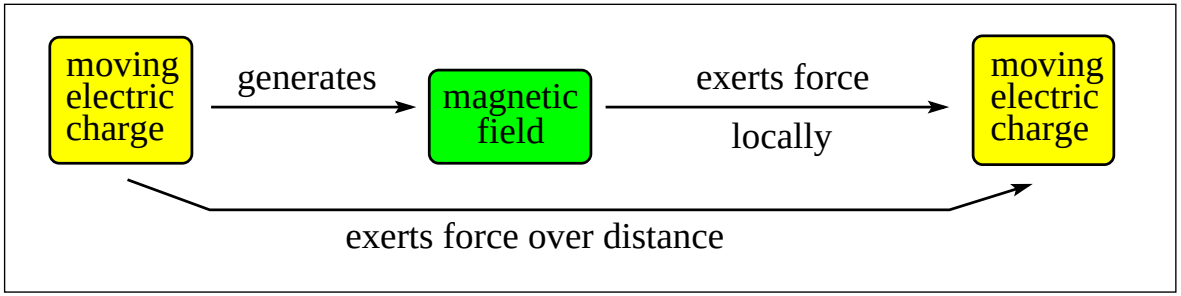
Magnetic Field of a Moving Point Charge



(1) Magnetic field $\vec{B}$ generated by point charge q: $\vec{B} = \frac{\mu_0}{4\pi} \frac{q\vec{v} \times \hat{r}}{r^2}$

(2) Force $\vec{F}_1$ exerted by field $\vec{B}$ on point charge q_1: $\vec{F}_1 = q_1 \vec{v}_1 \times \vec{B}$

(1+2) There is a time delay between causally related events over distance.

- Permeability constant
  $\mu_0 = 4\pi \times 10^{-7}$Tm/A