

MAGNETIC FORCE

$$\vec{F} = q \vec{v} \times \vec{B}$$

$$|\vec{F}| = q |\vec{v}| |\vec{B}| \sin \theta$$

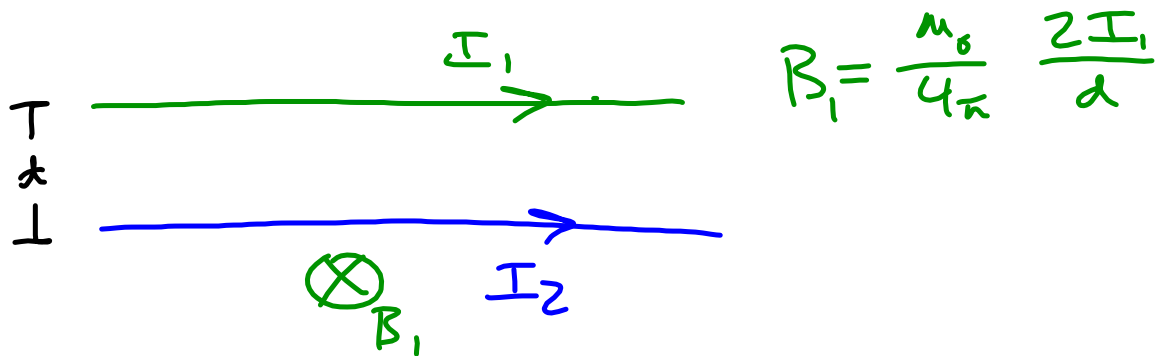
Applications \rightarrow Cyclotron and other particle accelerators, CRT

Magnetic Force on Current-Carrying
Wire $\frac{d\ell}{L}$

$$\vec{F} = \int I d\vec{\ell} \times \vec{B}$$

$$|\vec{F}| = I L |\vec{B}| \sin \theta$$

Force between Parallel Wires



$$F_{21} = I_2 L B_1 \sin(90^\circ)$$

$$\vec{F}_{21} = I_2 L \left(\frac{\mu_0}{4\pi} \frac{2I_1}{d} \right) \text{ UP}$$