

# Force Between Parallel Lines of Electric Current



- Electric currents:  $I_a, I_b$
- Magnetic field generated by line  $a$ :  $B_a = \frac{\mu_0 I_a}{2\pi d}$
- Magnetic force on segment of line  $b$ :  $F_{ab} = I_b L B_a$
- Magnetic force per unit length (attractive):  $\frac{F_{ab}}{L} = \frac{\mu_0 I_a I_b}{2\pi d}$

