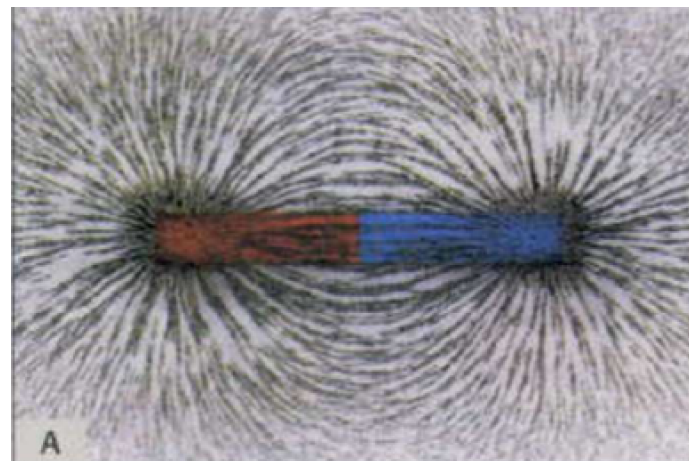
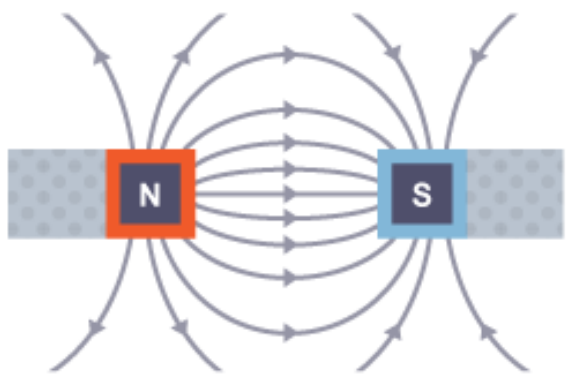
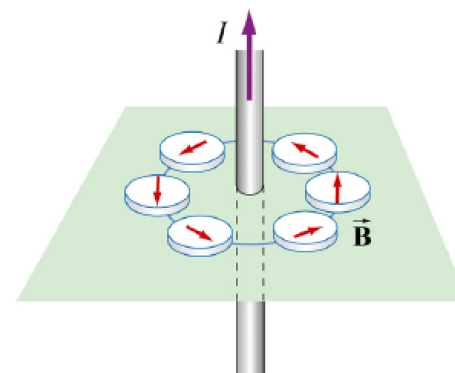
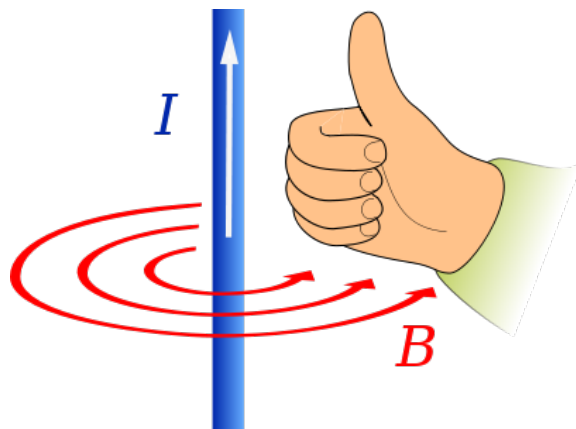
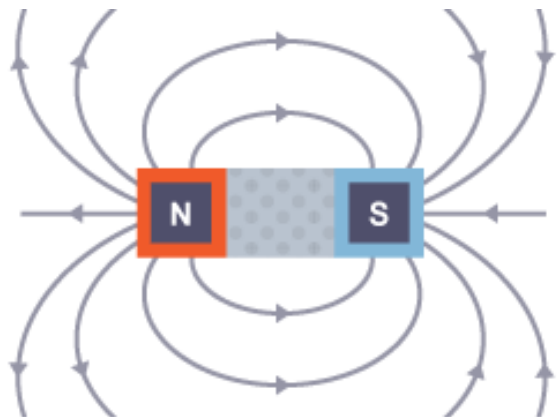
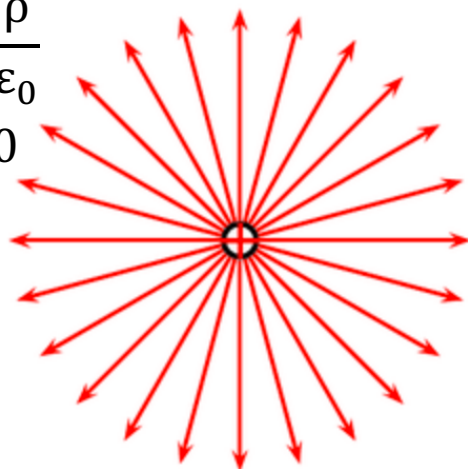




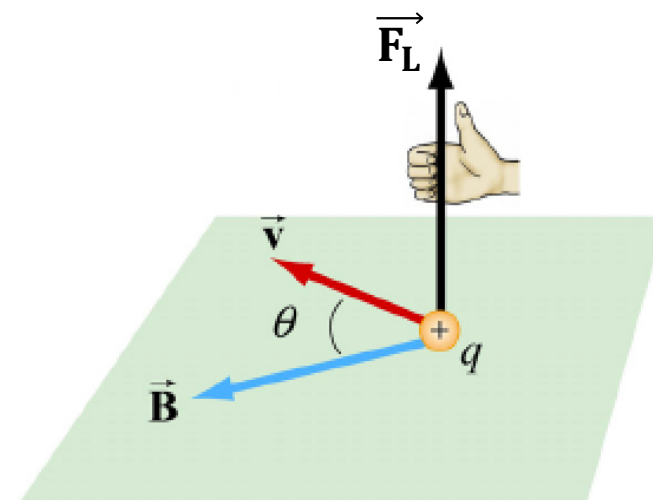
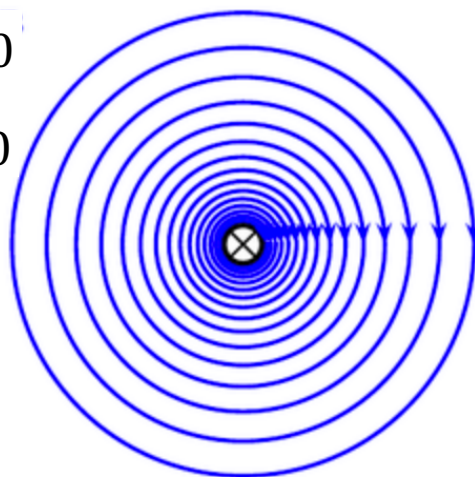
$$\text{div} \vec{E} = \frac{\rho}{\epsilon_0}$$

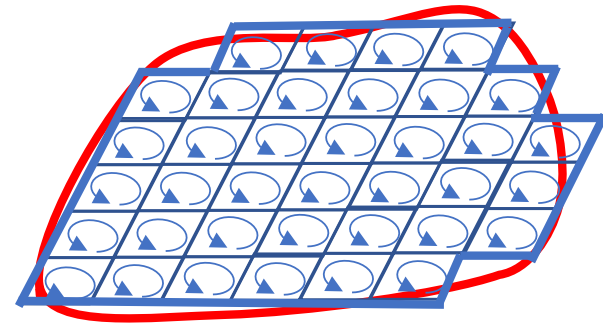
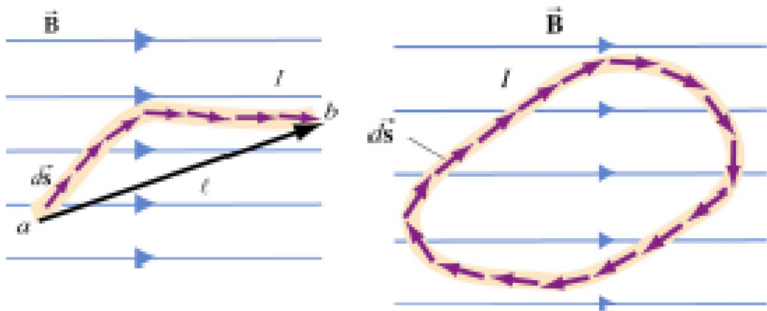
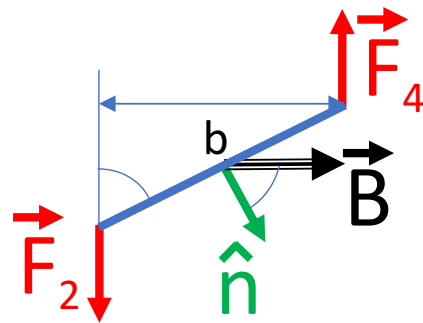
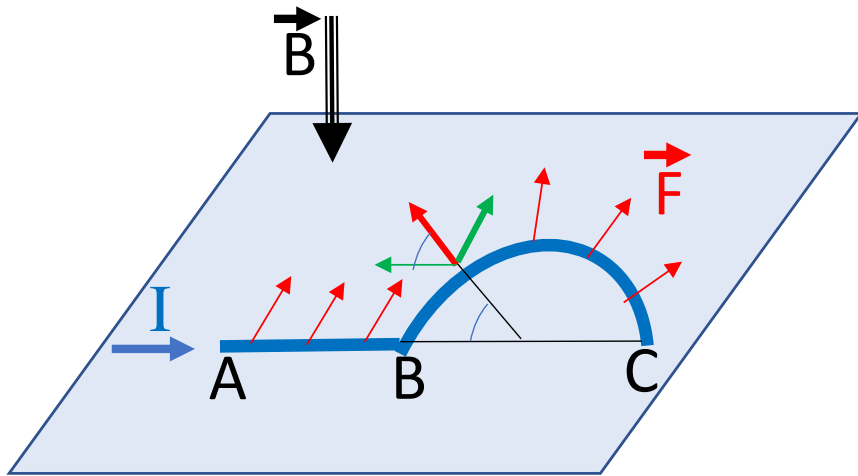
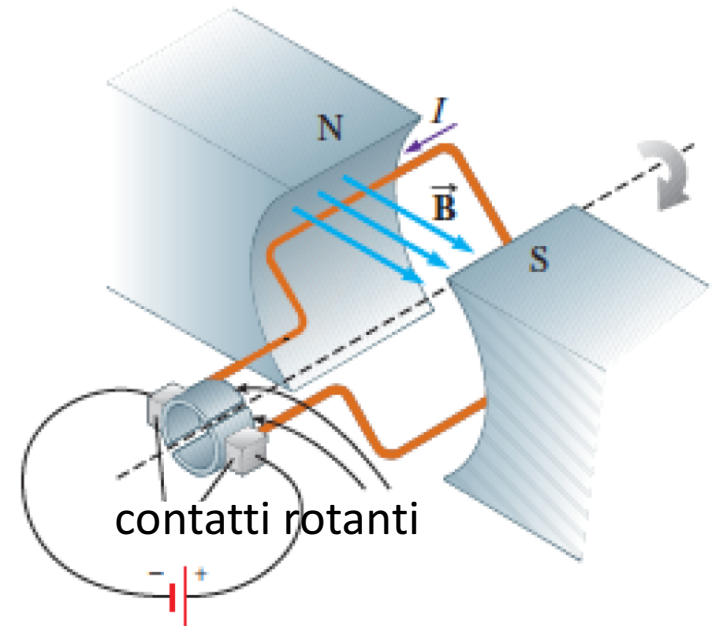
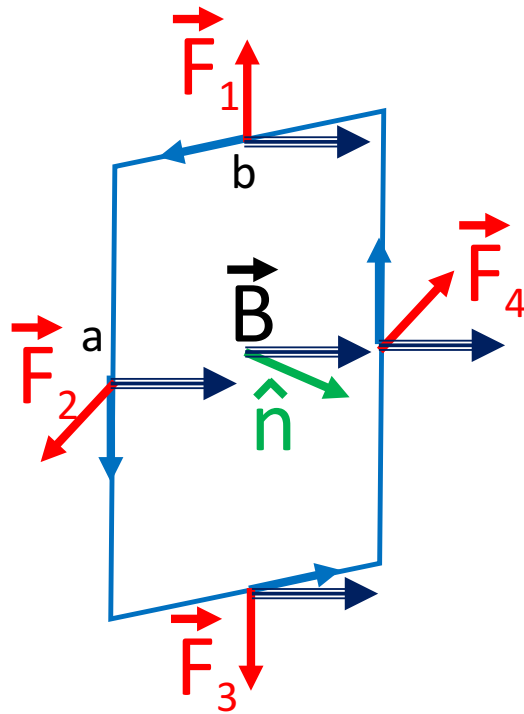
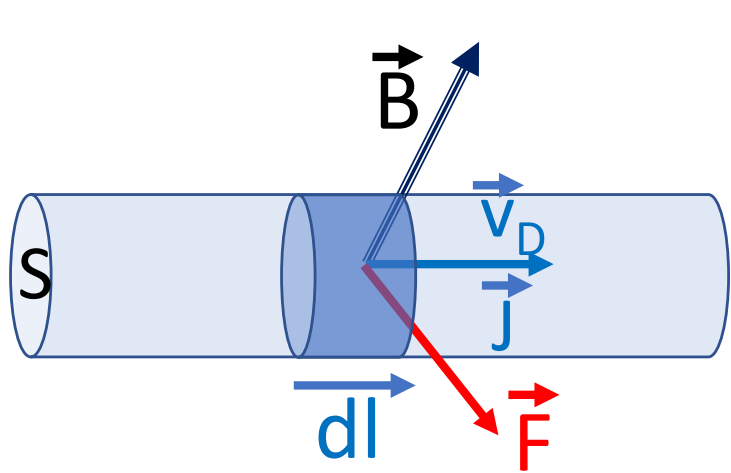
$$\text{rot} \vec{E} = 0$$

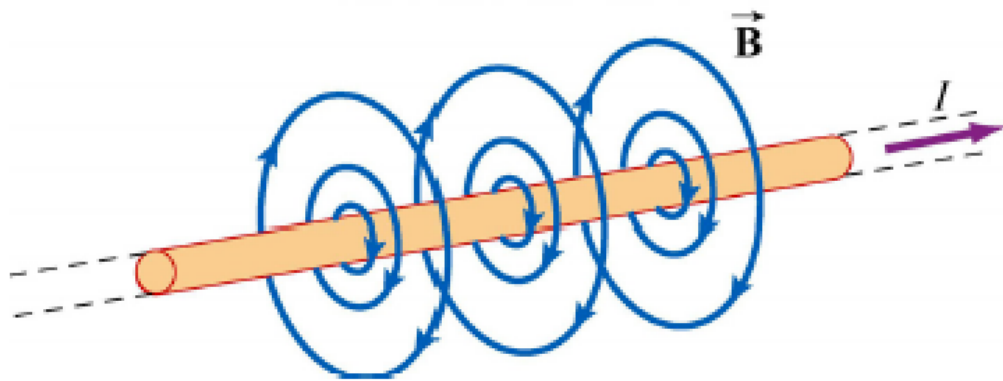
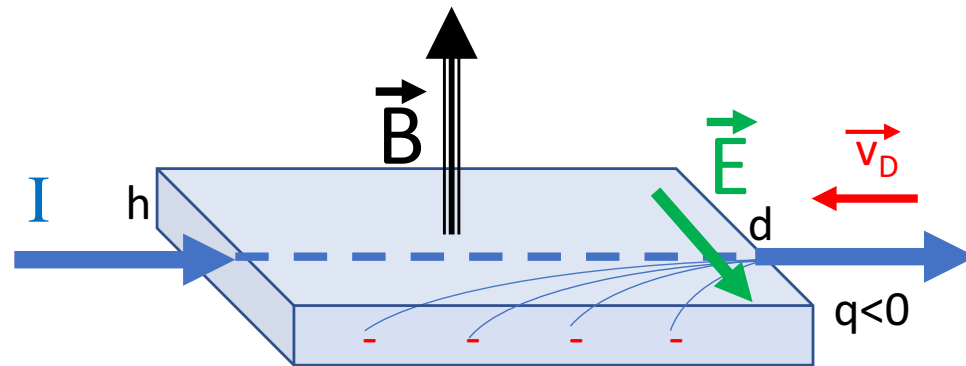
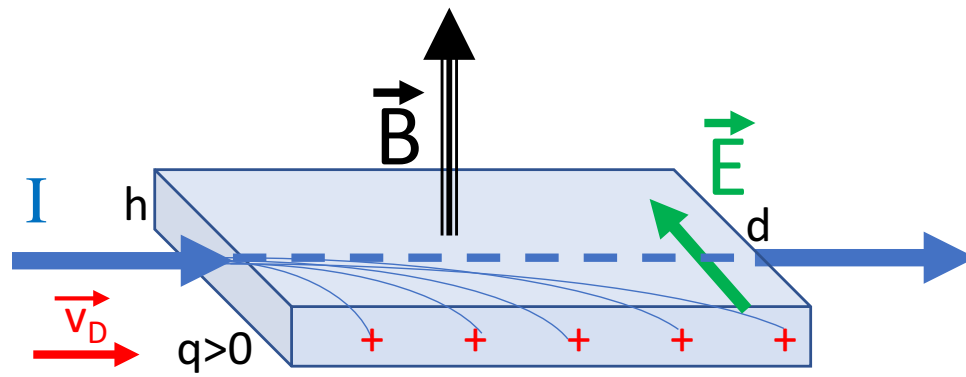


$$\text{div} \vec{B} = 0$$

$$\text{rot} \vec{B} \neq 0$$







perché $\text{div} \vec{B} = 0$

$$\text{div} \vec{B} = \text{div} \left(\oint \frac{\mu_0}{4\pi} I \frac{d\vec{l} \times \hat{r}}{r^2} \right) = \frac{\mu_0}{4\pi} I \oint \text{div} \frac{d\vec{l} \times \hat{r}}{r^2}$$

$$\text{div} \frac{d\vec{l} \times \hat{r}}{r^2} = \text{div} \frac{d\vec{l} \times \vec{r}}{r^3} = \text{div} \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ \frac{dx}{r^3} & \frac{dy}{r^3} & \frac{dz}{r^3} \end{vmatrix} =$$

$$= \frac{\partial \left(dy \frac{z}{r^3} - dz \frac{y}{r^3} \right)}{\partial x} + \frac{\partial \left(dz \frac{x}{r^3} - dx \frac{z}{r^3} \right)}{\partial y} + \frac{\partial \left(dx \frac{y}{r^3} - dy \frac{x}{r^3} \right)}{\partial z} =$$

$$= (dy z - dz y) \frac{\partial \frac{1}{r^3}}{\partial x} + (dz x - dx z) \frac{\partial \frac{1}{r^3}}{\partial y} + (dx y - dy x) \frac{\partial \frac{1}{r^3}}{\partial z} =$$

$$= (dy z - dz y) \left(-3 \frac{x}{r^5} \right) + (dz x - dx z) \left(-3 \frac{y}{r^5} \right) + (dx y - dy x) \left(-3 \frac{z}{r^5} \right) =$$

$$= -\frac{3}{r^5} (\cancel{dy/zx} - \cancel{dz/yx} + \cancel{dz/xy} - \cancel{dx/zy} + \cancel{dx/yz} - \cancel{dy/xz}) = 0$$