

# Angular momentum

$$u_{em} = \frac{\epsilon_0 E^2}{2} + \frac{B^2}{2\mu_0}$$

$$\vec{S} = \frac{1}{\mu_0} \vec{E} \times \vec{B}$$

$$\vec{P}_{em} = \epsilon_0 \mu_0 \vec{S} = \epsilon_0 \vec{E} \times \vec{B}$$

$$\vec{l}_{em} = \vec{r} \times \vec{P}_{em}$$

$$\vec{L}_{em} = \int \vec{l}_{em} d^3r =$$

$$= \int_{d^3r} \epsilon_0 \vec{r} \times (\vec{E} \times \vec{B})$$