

# Elektromagnetická vlna ve vakuu

$$\text{rot rot } \vec{H} = \text{rot } \frac{\partial \vec{D}}{\partial t}$$

$$\text{grad div } \vec{H} - \Delta \vec{H} = \text{rot } \frac{\partial \vec{D}}{\partial t}$$

$$\text{div } \vec{B} = 0 \rightarrow \text{div } \mu_0 \vec{H} = 0 \rightarrow \text{div } \vec{H} = 0$$

$$\vec{D} = \epsilon_0 \vec{E}$$

$$-\Delta \vec{H} = \text{rot } \frac{\epsilon_0 \partial \vec{E}}{\partial t}$$

$$\vec{B} = \mu_0 \vec{H} \quad \vec{H} = \frac{\vec{B}}{\mu_0}$$

$$-\frac{1}{\mu_0} \Delta \vec{B} = \text{rot } \frac{\epsilon_0 \partial \vec{E}}{\partial t}$$

$$-\frac{1}{\mu_0 \epsilon_0} \Delta \vec{B} = \frac{\partial}{\partial t} \text{rot } \vec{E}$$

$$\frac{1}{\mu_0 \epsilon_0} \Delta \vec{B} = \frac{\partial^2 \vec{B}}{\partial t^2}$$

$$\Delta \vec{B} = \mu_0 \epsilon_0 \frac{\partial^2 \vec{B}}{\partial t^2}$$