$$\begin{cases} \nabla \cdot \bar{E} = \frac{\rho}{\varepsilon_0} \\ \nabla \times \bar{E} = -\frac{\partial \bar{B}}{\partial t} \\ \nabla \cdot \bar{B} = 0 \\ \nabla \times \bar{B} = \mu_0 \left(\bar{j} + \varepsilon_0 \frac{\partial \bar{E}}{\partial t} \right) \end{cases}$$

$\bar{B} = \nabla \times \bar{A}$ $\quad \frac{\partial \rho}{\partial t} = \left| \frac{\partial \bar{j}}{\partial t} \right| = 0$

$\nabla \cdot (\nabla \times \bar{A}) = 0$

$\nabla \times (\nabla \times \bar{A}) = \nabla \cdot (\nabla \cdot \bar{A}) - \nabla^2 \bar{A} = \mu_0 \left(\bar{j} + \varepsilon_0 \frac{\partial \bar{E}}{\partial t} \right)$

0 – rachowanie Coulomba

0

$\nabla^2 \bar{A} = -\mu_0 \bar{j}$, nie da się dla $\bar{E}$, bo $\nabla \cdot \bar{E} = \frac{\rho}{\varepsilon_0} \neq 0$