$$\Delta \mathcal{L} = \kappa a \mathbf{E} \cdot \mathbf{B}, \qquad (1)$$

where $\kappa$ is a coupling constant. The resulting equations are

$$\nabla \cdot \mathbf{E} = \tilde{\rho} - \kappa \nabla a \cdot \mathbf{B}, \qquad (2)$$

$$\nabla \times \mathbf{E} = -\partial \mathbf{B}/\partial t, \qquad (3)$$

$$\nabla \cdot \mathbf{B} = 0, \qquad (4)$$

$$\nabla \times \mathbf{B} = \partial \mathbf{E}/\partial t + \tilde{\mathbf{j}} + \kappa(\dot{a}\mathbf{B} + \nabla a \times \mathbf{E}), \qquad (5)$$