THE \textbf{HOMOGENEOUS FIELD EQUATION}

\textbf{Differential Equations:}

\[ d \wedge F^a = A^{(0)} (\mathbf{R}^a \wedge \mathbf{v}) \]  

\textbf{THE COULOMB LAW (VECTOR NOTATION)}

\[ \nabla \cdot \mathbf{E}^a = \frac{J^a}{\varepsilon_0} = \mu_0 c J^a_0 \]

\textbf{Where:}

\[ J^a_0 = -\frac{\Lambda^{(a)}}{\mu_0} \left( R^a_{01} + R^a_{02} + R^a_{03} \right) \]

\textbf{THE AMPERE-MAXWELL LAW (VECTOR NOTATION)}

\[ \nabla \times \mathbf{B}^a = \frac{1}{c} \frac{\partial \mathbf{E}^a}{\partial t} + \mu_0 \mathbf{J}^a \]

\[ J^a_x = -\frac{\Lambda^{(a)}}{\mu_0} \left( R^a_{01} + R^a_{21} + R^a_{31} \right) \]  

\[ J^a_y = -\frac{\Lambda^{(a)}}{\mu_0} \left( R^a_{02} + R^a_{12} + R^a_{32} \right) \]  

\[ J^a_z = -\frac{\Lambda^{(a)}}{\mu_0} \left( R^a_{03} + R^a_{13} + R^a_{23} \right) \]
1) The Riemann curvature tensor appearing in their equations are elements of the Riemann tensor of the Einstein field equations of gravitation. Charge density and current density do not exist in the absence of gravitation.

2) The equations are given in the absence of production and quantization.

3) The equations are derived under the assumption that there is no gravitational torsion present, and the assumption that the free space geometry of the electromagnetic field is not changed by field matter interaction. This is a type of minimal postulation, i.e. a standard assumption.

4) It is clear that gravitation influences electromagnetism. It is not possible to analyze this influence in the standard model.