MAXWELL'S EQUATIONS

| Name or Description | SI | Gaussian |
|--|---|--|
| Faraday's law | $\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}$ | $\nabla \times \mathbf{E} = -\frac{1}{c} \frac{\partial \mathbf{B}}{\partial t}$ |
| Ampere's law | $ abla 	imes \mathbf{H} = rac{\partial \mathbf{D}}{\partial t} + \mathbf{J}$ | $ abla 	imes \mathbf{H} = rac{1}{c} rac{\partial \mathbf{D}}{\partial t} + rac{4\pi}{c} \mathbf{J}$ |
| Poisson equation | $\nabla \cdot \mathbf{D} = \rho$ | $\nabla \cdot \mathbf{D} = 4\pi\rho$ |
| [Absence of magnetic monopoles] | $\nabla \cdot \mathbf{B} = 0$ | $\nabla \cdot \mathbf{B} = 0$ |
| $egin{array}{c} { m Lorentz} \ { m force} \ { m on} \ { m charge} \ q \end{array}$ | $q\left(\mathbf{E}+\mathbf{v}\times\mathbf{B}\right)$ | $q\left(\mathbf{E} + \frac{1}{c}\mathbf{v} \times \mathbf{B}\right)$ |
| $\begin{array}{c} { m Constitutive} \\ { m relations} \end{array}$ | $\mathbf{D} = \epsilon \mathbf{E} \\ \mathbf{B} = \mu \mathbf{H}$ | $ \mathbf{D} = \epsilon \mathbf{E} \\ \mathbf{B} = \mu \mathbf{H} $ |