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Wave Equation of Force Propagation with Intrinsic Time and Space

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There are two types of time: intrinsic and extrinsic or period of a wave and exterior relative time, and the same for space.

Speed of the Force from Absolute Relativity

$$c^2t^2 - x^2 = k \quad \Leftrightarrow \quad x = \pm\sqrt{c^2t^2 - k} \quad \Leftrightarrow$$

$$V = \frac{dx}{dt} = \frac{c^2}{w} \quad \text{and} \quad w = \frac{x}{t} \quad \Leftrightarrow$$

$$\Leftrightarrow \quad V = \frac{dx}{dt} = \pm\frac{c^2t}{x}$$

Electromagnetic wave equation

$$\frac{d^2\vec{E}}{dt^2} = V^2\frac{d^2\vec{E}}{dx^2} \quad \Leftrightarrow \quad \frac{dx^2}{dt^2} = V^2 = \frac{c^4t^2}{x^2}$$

$$\Leftrightarrow \quad \frac{d\vec{E}}{dt} = -\frac{c^2t}{x}\frac{d\vec{E}}{dx}$$

Solution:

$$\vec{E} = \vec{E}_0 \cos k = \vec{E}_0 \cos[(ct - x)(ct + x)] \quad \Leftrightarrow$$

$$\Leftrightarrow \quad \vec{E} = \vec{E}_0 \cos(c^2t^2 - x^2)$$

$$\begin{cases} \dfrac{d\vec{E}}{dt} = \vec{E}_0(-)\sin(k)2c^2t \\ \dfrac{d\vec{E}}{dx} = \vec{E}_0(-)\sin(k)(-)2x \end{cases}$$

This derivation admits extrinsic time or independent coordinates.

$$\frac{d^2\vec{E}}{dt^2} = \frac{c^4t^2}{x^2}\frac{d^2\vec{E}}{dx^2} \quad \Leftrightarrow \quad \vec{E} = \vec{E}_0 \cos k \quad \text{and} \quad k = 1.9925698 \times 10^{-34}$$

For the point of view of intrinsic time and space (period and wavelength) the electric field is a constant squared speed, it doesn't oscillate. And the same for the magnetic field that is a constant speed. So, oscillation is relative.

Electric ($\vec{E}_0$) and magnetic ($\vec{B}_0$) fields with intrinsic time and space

Approximated solutions:

$$\frac{d\vec{E}}{dt} = -\frac{c^2t}{x}\frac{d\vec{E}}{dx} \quad \Leftrightarrow$$

$$\frac{\dfrac{d\vec{E}}{dt}}{\dfrac{d\vec{E}}{dx}} = -\frac{c^2t}{x} = -\frac{\dfrac{(c^2t)^3}{x^4}}{\dfrac{(c^2t)^2}{x^3}} \quad \Leftrightarrow$$

$$\frac{d\vec{E}}{dt} = \frac{c^6t^3}{(c^2t^2-k)^2} \quad \text{and} \quad \frac{d\vec{E}}{dx} = \frac{c^4t^2}{x^3} \quad \Leftrightarrow$$

$$\Leftrightarrow \quad \vec{E}_0 = \frac{c^2}{2}\left(\log\left|c^2t^2-k\right| - \frac{k}{c^2t^2-k}\right) \quad \text{or}$$

$$\vec{E}_0 = c^2\left(\log x - \frac{k}{2x^2}\right)$$

For the electron: $t = 8.1\times10^{-21}$; $x = 2.4\times10^{-12}$ $\Leftrightarrow$

$$\Leftrightarrow \qquad \underline{\vec{E}_{0e} = 2.4\times10^{18}}$$

$$\frac{\frac{d\vec{B}}{dt}}{\frac{d\vec{B}}{dx}} = -\frac{c^2 t}{x} = -\frac{\frac{(c^2 t)^2}{x^3}}{\frac{c^2 t}{x^2}} \qquad \Leftrightarrow$$

$$\frac{d\vec{B}}{dt} = \frac{c^4 t^2}{x^3} = c^4 \frac{t^2}{(c^2 t^2 - k)^{3/2}} \qquad \Leftrightarrow$$

$$\Leftrightarrow \qquad \vec{B}_0 = c\left[\log\left(2\left(ct + \sqrt{c^2 t^2 - k}\right)\right) - \frac{ct}{\sqrt{c^2 t^2 - k}}\right]$$

For the electron:

$$\underline{\vec{B}_{0e} = 7.9\times10^{9}} \quad ; \qquad \frac{\vec{E}_{0e}}{\vec{B}_{0e}} = c$$