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Theory of CPH

Section Nine

Maxwell Equations in gravitational Field

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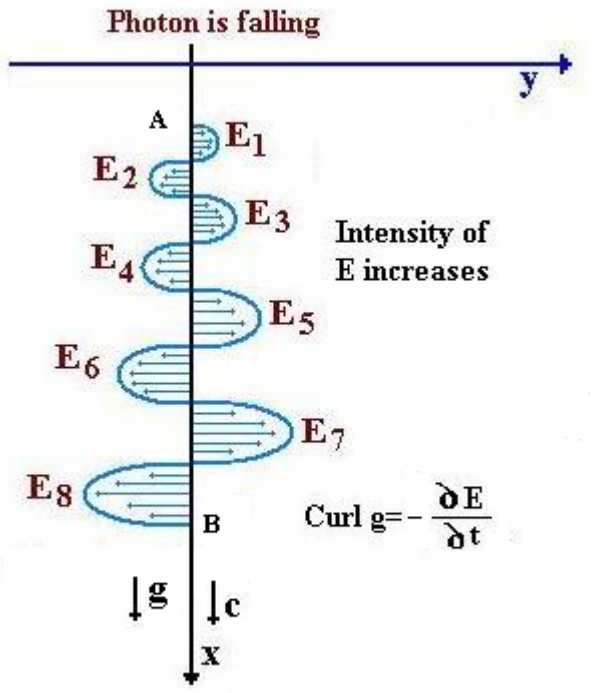
Maxwell Equations in Gravitational Field

As explain before, when photon is falling in a gravitational field, gravitons behave like charge field and magnet field, and they are called color-charge magnet-color.
So, there is an especial relationship between electromagnetic waves and gravity.
As we know electromagnetic waves subordinate of Maxwell equations.
So, depending gravity and electromagnetic waves should subordinate of equations like Maxwell equations.
Question is that how we can find these equations.

We should reconsider to effect of gravitational on photon again.
Let's select x axis for gravity direction. So, propagation of light direction is downward same as gravity.
So, direction of electric field is horizontal (y axis) and perpendicular to light's velocity.
When photon falls, its intensity electric field increases and according CPH Theory, intensity of gravity decreases.
In the other word, lots color-charges of gravitational field enter into photon's structure (see following picture). Consider that the sum energy of photon and gravitation is stable.
So, any changing of each other is equal of other changing with opposite sign.



Direction of g is perpendicular E.

There are two vector functions, one is the gravitational field and other one is electric field. Now we use;

$$\nabla$$

for vector product on vector gravity field, that results a vector field perpendicular of photon's propagation. So, we have;

$$\text{Curl } g = -\frac{\partial E}{\partial t}$$

When photon is falling intensity of electric field increases relative to time, and same as it the number of color-charge decreases of gravity field.
See following table according the above picture.

Point A; Photon contains k_1 CPH
Point B; Photon contains k_2 CPH
$k_2 > k_1$

So, same as the number CPH increases in the structure of photon decreases the number of color-charge in gravity field. But it is not the entire story. Because as Maxwell equations show according the changing of electric field the magnetic field does change too. So, we have;

$$\text{Curl } E = -\frac{\partial B}{\partial t}$$

Maxwell equation

So, same as increasing of magnetic field, the number of graviton decreases in gravity field.
This phenomenon has a reverse phenomenon too. When photon escapes the gravitational field (Red-shift) photon energy decreases, so the intensity of electric field decreases too. In this case a number color-charge arises of photon structure and adds to gravitons in gravity field. So, we have;

$$\text{Curl } E = -\frac{\partial g}{\partial t}$$

Totally, if we will use the Maxwell equations for real space, that there is gravity effect in space, we should use six equations.

Maxwel equation in Real space

$$\text{div}\,\mathbf{E} = \frac{1}{\varepsilon_0}\rho \qquad (1)$$

$$\text{div}\,\mathbf{B} = 0 \qquad (2)$$

$$\text{Curl}\,\mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \qquad (3)$$

$$\text{Curl}\,\mathbf{B} = \mu_0 J + \mu_0 \varepsilon_0 \frac{\partial \mathbf{E}}{\partial t} \qquad (4)$$

$$\left.\begin{aligned} \text{Curl}\,\mathbf{g} &= -\frac{\partial \mathbf{E}}{\partial t} \\ \text{Curl}\,\mathbf{E} &= -\frac{\partial \mathbf{g}}{\partial t} \end{aligned}\right\} \text{When gravity exists}$$

Any space that has gravity effect and electromagnetic waves pass of it, intensity of gravity field does change. So, energy of space does change.