

Unification of Gravity and Electricity

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I think a theory which unifies gravity and electricity in the macroscopic domain does not require complicated mathematics because I think the god created the universe using simple and beautiful equations.

Postulates:

- * Mass is a subject of the gravitational field
- * Charge is a subject of the electromagnetic field.

If we have a charge moving in an electromagnetic field, it has kinetic energy and momentum. Of course, there is no mass because there is no gravitational field. The observer will determine this charge obeys Newton's laws. At high speed, the charge will obey relativity's laws.

We can say the momentum of the charge equals

$$P = Q v$$

And kinetic energy

$$E = 1/2 Qv^2$$

At high speed

$$Q = Q (1 - v^2/c^2)^{-1/2}$$

And momentum

$$P = Q v$$

So, we can say the energy of the charge equals

$$E = Qc^2$$

Energy can transform into charge. We have

$$\begin{array}{l} E = Mc^2, \quad E = Qc^2 \\ Mc^2 = Qc^2 \quad \text{so,} \quad M = Q \end{array}$$

Mass can transform into charge, and charge into mass. Also, the observer will determine the electromagnetic field is a curvature of space-time.

$$EM^{ab} = k T^{ab} \quad \text{Where}$$

EM^{ab} is the electromagnetic tensor

T^{ab} is the energy momentum tensor of charge.

k is constant

C is the speed of light.

- The gravitational field tensor

$$G^{ab} = G T^{ab}$$

T^{ab} is the energy–momentum tensor of mass

G is constant

We have

$$M = Q$$

So,

$$(T^{ab})^{\text{mass}} = (T^{ab})^{\text{charge}}$$

So, the unification field equation is:

$$G^{ab} = S EM^{ab}$$

Where S is the Afifi constant equal to $S = G/k$

Now, we can produce an electromagnetic field from a gravitational field and vice versa

- The Maxwell equations of electromagnetic field is

$$\text{div } Ee = pe$$

$$\text{Curl } Ee = \text{zero}$$

$$\text{Curl } Be = Je$$

$$\text{div } Be = \text{zero}$$

Where pe is the density of charge.

- The Einstein – Maxwell equations of the Gravitational field:

$$\text{div } Eg = pg$$

$$\text{Curl } Bg = Jg$$

$$\text{Curl } Eg = \text{zero}$$

$$\text{div } Bg = \text{zero}$$

Where pg is the density of mass.

So, we can unify Maxwell's equations of the electromagnetic field and the Einstein – Maxwell equations of the gravitational field.

$$\text{Div } Eg = S \quad \text{div } Ee$$

$$\text{Curl } Bg = S \quad \text{Curl } Be$$

$$\text{Curl } Eg = S \quad \text{Curl } Ee = \text{zero}$$

Div Bg = S div Be = zero

If we apply the ricci tensor we have,

$$G^{ab} = R^{ab} - 1/2 g^{ab} R$$

$$Em^{ab} = z^{ab} - 1/2 g^{ab} z$$

$$G^{ab} = S EM^{ab}$$

$$R^{ab} - SZ^{ab} + 1/2 g^{ab} z - 1/2 g^{ab}$$

$$R = \text{zero}$$