MATTER THEORY OF MAXWELL EQUATIONS

WU SHENG-PING

ABSTRACT. This article try to unified the four basic forces by Maxwell equations, the only experimental theory. Self-consistent Maxwell equation with the e-current from matter current is proposed. and is solved to four kinds of electrons and the structures of particles. The static properties and decay and scattering are reasoned, all meet experimental data. The equation of general relativity sheerly with electromagnetic field is discussed. In the end the conformation elementarily between this theory and QED and weak theory is discussed compatible, except some bias in some analysis.

CONTENTS

1. UNIT DIMENSION OF sch

A rebuilding of units and physical dimensions is needed. Time s is fundamental. We can define:
The unit of time: s (second)
The unit of length: cs (c is the velocity of light)
The unit of energy: $\hbar/s$ (h is Plank constant)

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The unit dielectric constant ϵ is

$$[\epsilon] = \frac{[Q]^2}{[E][L]} = \frac{[Q]^2}{\hbar c}$$

The unit of magnetic permeability μ is

$$[\mu] = \frac{[E][T]^2}{[Q]^2[L]} = \frac{\hbar}{c[Q]^2}$$

We can define the unit of Q (charge) as

$$c\epsilon = c\mu = 1$$

then

$$[Q] = \sqrt{\hbar}$$

$$[H] = [Q]/[L]^2 = [cD] = [E]$$

Then

$$\sqrt{\hbar} : C = (1.0546 \times 10^{-34})^{1/2}$$

C is charge SI unit Coulomb.

For convenience we can define new base units by unit-free constants

$$c = 1, \hbar = 1, [Q] = \sqrt{\hbar}$$

then all physical unit are power of second s^n, the units are reduced.

Define

$$UnitiveElectricalCharge : \sigma = \sqrt{\hbar}$$

$$\sigma = 1.03 \times 10^{-17} C \approx 64e$$

$$e_{/\sigma} = e/\sigma = 1.56 \times 10^{-2} \approx 1/64$$

The unit of charge can be reset by *linear variation of charge-unit*

$$Q \to CQ, Q : \sigma/C$$

We will use it without detailed explanation.

2. Self-consistent Electrical-magnetic Fields

Try equation for the free E-M field in mass-center frame

$$\partial \cdot \partial' A = iA^{\nu *} \cdot \partial A_\nu = -J, \quad Q_e = 1 \tag{2.1}$$

$$Q_e = \int dV (A^{\nu *} \cdot i\partial_t A_\nu) \tag{2.2}$$

$$\partial_\nu \cdot A^\nu = 0$$

with definition

$$(A^i) := (V, \mathbf{A}), (J^i) = (\rho, \mathbf{J}), (J_i) = (-\rho, \mathbf{J})$$

$$\partial := (\partial_i) := (\partial_t, \partial_{x_1}, \partial_{x_2}, \partial_{x_3})$$

$$\partial' := (\partial^i) := (-\partial_t, \partial_{x_1}, \partial_{x_2}, \partial_{x_3})$$

Q_e is the charge of electron. It's deduced by using momentum to express e-current in a electron. The equation 2.1 have symmetry

$$CPT, cc.PT$$

The energies of field A are

$$\varepsilon := \int dV (E \cdot E^* + H \cdot H^*)/2 = - < A^\nu | \nabla^2 | A_\nu > /2$$

It's gauge-invariant.

$$F = < A^\nu, J_\nu >$$

It's relativistic invariant. As a convention the time-variant part is neglected.

3. Calculation of Recursive Re-substitution

We can calculates the solution by recursive re-substitution for the two sides of the equation. For the equation

$$\hat{P}' B = \hat{P} B$$

Make the algorithm

$$\hat{P}'(\sum_{k \le n} B_k + B_{n+1}) = \hat{P} \sum_{k \le n} B_k$$

One can write down a function initially and correct it by re-substitution. Here is the initial state

$$V = V_i e^{-ikt}, A_i = V, \partial_\mu \partial^\mu A_i^\nu = 0$$

Substituting into equation 2.1

$$\partial \cdot \partial' \mathbf{A} = i A^{\nu *} \nabla A_\nu, Q_e = 1$$

with

$$\partial_\nu \cdot A^\nu = 0$$

We calls the fields' correction A_n with n degrees of A_i the n degrees correction.

By the condition 2.1 to solve the dynamic process in the mass-center frame

$$\hat{P}'(A - A_i) = \hat{P}(A - A_i)$$

$$\hat{P}(A) := F(i A^{\nu *} \partial A_\nu)$$

$$\hat{P}' := g_{ij} s^i s^j$$

Then the dependence between initial state and later state is

$$< A_\mu | \hat{P}' / (\hat{P}' - \hat{P}) | A_i^\mu > \tag{3.1}$$

because

$$\int dA < A_\mu, \hat{P} / (\hat{P}' - \hat{P}) A_i^\mu >= 0$$

The fraction of operator is comprehended as recursive re-substitution.

4. Radium Function

Firstly

$$\nabla^2 A = -k^2 A$$

is solved. Exactly, it's solved in spherical coordinate

$$0 = r^2(\nabla^2 f + k^2 f) = k^2 r^2 f + (r^2 f_r)_r + \frac{1}{\sin\theta}(\sin\theta f_\theta)_\theta + \frac{1}{\sin^2\theta}(f_\phi)_\phi$$

Its solution is

$$f = R\Theta\Phi = R_l Y_{lm}$$

$$\Theta = P_l^m(\cos\theta), \Phi = \cos(\alpha + m\phi)$$

$$R_l = N\eta_l(kr), \eta_l(r) = r^l \int_0^\infty \frac{1}{(\lambda^2 - 1)^{2l+1}} \cos(\lambda r) d\lambda$$

$$\int_0^\infty dr \cdot r^2 R^2 = 1$$

R is solved like

$$(r^2R_r)_r = -k^2r^2R + l(l+1)R, l \geq 0$$
$$R \to rR'$$
$$(r^2R')_{rr} = -k^2r^2R' + l(l+1)R'$$
$$R' \to r^{l-1}R'$$
$$rR'_{rr} + 2(l+1)R'_r + k^2rR' = 0$$
$$r \to r/k$$
$$(s^2F)' + 2(l+1)sF + F' = 0, F = F(R')$$

$F()$ is the Fourier transform

$$R' = \int_0^\infty \frac{1}{(\lambda^2-1)^{2l+1}} \cos(\lambda kr) d\lambda$$

For $l = 1$, the function R' has zero derivative at $r = 0$ and is zero as $r \to \infty$.

5. Solution

The derivatives of the function of electron has a strange breaking point in coordinate origin hence without normal convenience of Fourier transform. The following are some proximation of the first rank. The solution of $l = 1, m = 1, Q = e_{/\sigma}$ is calculated or tested for electron.

$$A_1 = NR_1(kr)Y_{1,1},$$

The magnetic dipole moment μ_z is calculated as the first rank of proximation

$$\mu = \mathbf{r} \times \partial \cdot \partial' A/2$$
$$\mu_z =< A| - i\partial_\phi|A > /2$$
$$= 1/2, k_e = 1, Q_e = 1$$

The power of unit of charge is not equal for this equation, but it's valid for unit $Q = e$. The spin is

$$S_z =< A|\partial_\phi\partial_t|A > /2$$
$$= 1/2, k_e = 1, Q_e = 1$$

6. Electrons and Their Symmetries

Some states of electrical field A are defined as the core of the electron, it's the initial function $A_i = V$ for the re-substitution to get the whole electron function:

$$e_r^+ : NR_1(kr)Y_{1,1}e^{ikt}$$
$$e_l^+ : NR_1(kr)Y_{1,-1}e^{ikt}$$
$$e_r^- : -NR_1(kr)Y_{1,-1}e^{-ikt}$$
$$e_l^- : -NR_1(kr)Y_{1,1}e^{-ikt}$$
$$k \approx m_e$$

r, l is the direction of the spin. We use these symbols e to express the complete potential field A or the abstract particle.

The second rank of correction A_2 ie. the static field is with

$$< e_\mu|i\partial_t|e^\mu >= Q_e$$
$$< \nabla e_\mu|\nabla e^\mu >= k_e e_{/\sigma}$$

The correction of the equation 2.1 is

$$A_n = A_{n-1} \cdot (\partial(iA_i - iA_i^*)/2) * u$$
$$= A_i^*(i\partial_t A_i)(\partial_t(iA_i - iA_i^*)/2)^{n-3}\partial(iA_i - iA_i^*)/2$$
$$u = \delta(r - ct)/(4\pi r), k_e = 1$$

The function of e_r^+ is decoupled with e_l^+

$$< \nabla(e_r^+)^\nu + \nabla(e_l^+)^\nu, \nabla(e_r^+)_\nu + \nabla(e_l^+)_\nu >$$
$$- < \nabla(e_r^+)^\nu, \nabla(e_r^+)_\nu > - < \nabla(e_l^+)^\nu, \nabla(e_l^+)_\nu >= 0$$

Calculating the crossing part between e_r^+, e_r^- ie. mainly between A_2

$$\varepsilon_e \approx -e^3_{/\sigma} k_e = -\frac{1}{1.76 \times 10^{-16} s}$$

The value of increment on the coupling of the both electrons is

$2\varepsilon_e$	e_r^+	e_r^-	e_l^+	e_l^-
e_r^+	$+$	$-$	0	0
e_r^-	$-$	$+$	0	0
e_l^+	0	0	$+$	$-$
e_l^-	0	0	$-$	$+$

Calculating the crossing part between e_r^+, e_l^- ie. mainly between A_4

$$\varepsilon_x \approx -\frac{1}{4} e^7_{/\sigma} k_e \approx -\frac{1}{2.18 \times 10^{-8} s}$$

The calculations referenced to latter theorems. The value of increment on the coupling of the both electrons is

$2\varepsilon_x$	e_r^+	e_r^-	e_l^+	e_l^-
e_r^+	$+$	0	0	$-$
e_r^-	0	$+$	$-$	0
e_l^+	0	$-$	$+$	0
e_l^-	$-$	0	0	$+$

7. Propagation and Movement

Because field F is additive, the group of electrons are express by:

$$F = \sum_i f_i * \nabla e_i, < f_i | f_i >= 1$$

It's called *propagation. The convolution is made only in space:*

$$f * g = \int d^3x f(t, x) g(t, y - x)$$

Each f_i is normalized to 1. We always use

$$\sum_i f_i * e_i, \sum_i f_i * \nabla e_i$$

to express its abstract construction and the field. The following are stable propagation:

particle	*electron*	*photon*	*neutino*
notation	e_r^+	γ_r	ν_r
structure	e_r^+	$(e_r^+ + e_r^-)$	$(e_r^+ + e_l^-)$

Define

$$\varsigma_{k,l,m}(x) := R_l(kr)Y_{l,m}, \varsigma_k = \varsigma_k^{\pm}(x) := \varsigma_{k,1,\pm 1}(x)$$

$$< \varsigma_k(x), \varsigma_k(x) >= 1$$

meets the following results

Theorem 7.1.

$$\int d^3\mathbf{x} R(\varsigma_k^{\pm}(x))\varsigma_k^*(x-y) = 0, y \neq O$$

R is any rotation.

Proof. Use the limit

$$\lim_{k' \to k} \int dV \varsigma_k^{\pm}(x)\varsigma_{k'}^*(x-y)$$

and the identity

$$h\nabla^2 g - g\nabla^2 h = \nabla \cdot (h\nabla g - g\nabla h)$$

For the function, it's strange in grid origin. □

Theorem 7.2.

$$\varsigma_1 * \frac{1}{4\pi r} = \varsigma_1$$

Proof.

$$\nabla^2(\varsigma_1 * \frac{1}{4\pi r}) = \nabla^2 \varsigma_1$$

□

Theorem 7.3.

$$\nabla^2 \varsigma_1^n \varsigma_1^{n'*} = C\varsigma_1^n \varsigma_1^{n'*}$$

$$\varsigma_1^n \varsigma_1^{n'*} * \varsigma_1 * \frac{1}{4\pi r} = \varsigma_1^n \varsigma_1^{n'*} * \varsigma_1$$

$$= \varsigma_1^n \varsigma_1^{n'*} \varsigma_1 * \frac{1}{4\pi r} = \varsigma_1^n \varsigma_1^{n'*} \varsigma_1$$

Theorem 7.4.

$$\nabla(\varsigma_k * \varsigma_{k'}) = (\nabla \varsigma_k) * \varsigma_{k'} + \varsigma_k * \nabla(\varsigma_{k'})$$

Use this condition to prove:

$$\varsigma_k(x-c) * \varsigma_{k'}(x+c) = C\varsigma_k(x-c)\varsigma_{k'}(x+c)) * I(x-2c)$$

$$I(x) = \begin{cases} 1 & x = O \\ 0 & x \neq O \end{cases}$$

Theorem 7.5.

$$\int dV(\varsigma_1\varsigma_1^*)^n = \int dV(\varsigma_1\varsigma_1^*)^n * (\varsigma_1\varsigma_1^*) = \int dV(\varsigma_1\varsigma_1^*)^{n+1}$$

Theorem 7.6.

$$(\nabla \varsigma_k) * \varsigma_1 = k\varsigma_k * \nabla \varsigma_1$$

The movement of the propagation is called *Movement*, ie. the third level wave, harmonic wave.

The static MDM (magnetic dipole moment) of a group of electrons is

$$\mu = \mathbf{r} \times \partial \cdot \partial'(\int d\mathbf{x} e_x * \sum_j \nabla e^\mu_j(x_i))/2$$

$$= < \int d\mathbf{x} e_x * \sum_j \nabla e^\mu_j(x_i) | i\mathbf{r} \times \partial | \int d\mathbf{x} e_x * \sum_j \nabla e_{j\mu}(x_i) > /2$$

for the kinds of muon with decoupled electrons

$$\mu_z \approx \sum_j < e_{j\mu}(x_i) | (-i\partial_\phi e^\mu_j(x_i)) > \frac{k_{ej}}{2k_x}, Q_e = 1$$

Calculating the following coupling system

$$e_x * \sum_i e_i$$

$$\partial \cdot \partial' e_x = 0$$

$$e_x = e^{-iNt} \varsigma_N, N = < \rho, V > \approx < \nabla A_\nu, \nabla A^\nu > \tag{7.1}$$

The mechanical movements p of particle $e_x * \sum e$ by relative theory is

$$F = e^{i\mathbf{px} - ikt} * e_{\mathbf{x}} e^{-ik_x t} * \sum \nabla e$$

The Lorentz invariance are

$$-p^\mu p_\mu = C, L(k_x) = k_x$$

Because the self coordinate measure of the particle e_x is k_x^2, so that

$$p^\mu p_\mu = 0$$

This theory seems contradicting with Einstain's theory and the co-variant EM field, but they are the same in Rieman's grid.

8. Antiparticle

Antimatter is the positive matter reverse world-line (PT), If $A(x), A'$ describes positive matter, $A(-x))$ is describes antimatter, we define

$$\overline{A(x)} := A(-x)$$

so that the anti-matter from the equation 2.1 meets

$$\partial_\nu \partial^\nu \overline{A} = -ie_{/\sigma} \overline{A^{\nu *}} \cdot \partial \overline{A_\nu}$$

hence

$$\partial_\nu \partial^\nu (\overline{A} + A') = -ie_{/\sigma}(\overline{A^{\nu *}} \partial \overline{A_\nu})/2 + ie_{/\sigma}(A'^{\nu *} \partial A'_\nu) \tag{8.1}$$

We have the reaction in four-dimension map

$$p \rightarrow, A(x) \rightarrow \bullet \rightarrow p'$$

equivalent to

$$p \rightarrow \bullet \rightarrow A(-x), \rightarrow p'$$

and

$$\overline{e^+_r} = e^-_l$$

9. Conservation Law and Balance Formula

No matter in E-M fields level or in movement (the third) level, the conservation law is *conservation of momentum and conservation of angular momentum.* A *balance formula* for a reaction is the equivalent formula in positive matter, ie. after all anti-matter is shifted to the other side of the reaction formula. Balance formula is suitable for the analysis of the energy transition of decay. The *invariance of electron itself* in reaction is also a conservation law.

10. Muon

Generally, there are kinds of energy increments.
Weak coupling

$$W :< \nabla(e_r^+)^\nu | \nabla(e_l^-)_\nu >$$

Light coupling

$$L :< \nabla(e_r^+)^\nu | \nabla(e_r^-)_\nu >$$

Weak side coupling

$$Ws :< \nabla(e_r^+)^\nu | \nabla(e_l^-)_\nu > - < e_x * \nabla(e_r^+)^\nu | e^{ipx} * \nabla(e_l^-)_\nu >$$

Light side coupling

$$Ls :< \nabla(e_r^+)^\nu | \nabla(e_r^-)_\nu > - < e_x * \nabla(e_r^+)^\nu | e^{ipx} * \nabla(e_r^-)_\nu >$$

Strong coupling

$$S :< \nabla(e_r^+)^\nu | \nabla(e_r^+)^\nu >$$

Because of the degrees of the derivatives the anti-matter couplings are the same except strong coupling.

μ is composed of

$$\mu_r^+ : e_\mu * (e_r^+ + \overline{\nu_r})$$

From the equation 16.1 and 7.1 and the other deductive, μ is with mass $3m_e/e_{/\sigma} = 3 \times 64k_e$, spin 1/2, MDM $\mu_B k_e/k_\mu$.

The main channel of decay

$$\mu_r^+ \to M_l^+ + \overline{\nu_l}$$

$$M_r^+ = e_M * (\overline{e_l^-} + \nu_l)$$

$$e_\mu * e_r^+ + e^{-ip_1x} * e_M^* * e_l^- + \overline{e^{ip_2x}} * \nu_l \to \overline{e_\mu} * \nu_r + \overline{e^{ip_1x}} * \overline{e_M}\nu_l$$

The outer waves e_μ and $e^{-ip_1x} * e_M^*$, e_μ and e^{-ip_2x} are coupling. The energy difference is kind of Ws, the interacting field is between A_4.

$$2 < \overline{e_\mu} * \nabla(e_r^+)^\nu | e^{-ip_1x} * \nabla(e_l^-)_\nu > -2 < \nabla(e_r^+)^\nu | \nabla(e_l^-)_\nu >$$

$$\approx 2\frac{k_\mu}{k_\mu + k_e} < \nabla(\overline{e_\mu} * (e_r^+)^\nu) | e^{-ip_1x} * \nabla(e_l^-)_\nu > -2 < \nabla e_r^+ | \nabla(e_l^-)_\nu >$$

sum up in spectrum of $p_1 : p_1^\mu p_{1\mu} = 0$

$$= 2(1 - \frac{k_\mu}{k_\mu + k_e}) < (e_r^+)^\nu | \nabla^2(e_l^-)_\nu >$$

$$= -\frac{2k_e\varepsilon_x}{k_\mu}$$

The emission of decay is

$$= \frac{1}{2.1 \times 10^{-6}s} \quad [2.1970 \times 10^{-6}s][1]$$

The data in square bracket is experimental data. The decay of particle M is like a scattering with no energy emission

$$M_r^+ \to \overline{e_l^-} + \nu_l$$

11. Pion Positive

Pion positive is

$$\pi_l^- : e_\pi * (\overline{e_r^+} + e_l^-) + e_\pi^* * e_r^+$$

It's with mass $5 \times 64m_e$, spin 1/2 and MDM $\mu_B k_e/k_{\pi^+}$.

Decay Channels:

$$\pi_l^- \to \mu_l^- + \nu_r$$

It's with balance formula

$$e_\pi^* * e_r^+ + e_\pi * e_l^- + \overline{e^{ip_1x}} * \overline{e_\mu} * \nu_r \to \overline{e_\pi} * e_r^+ + e^{ip_1x} * e_\mu * e_l^- + e^{ip_2x} * \nu_r$$

The emission of energy is kind of W

$$-\varepsilon_x = \frac{1}{2.18 \times 10^{-8}s} \quad [(2.603 \times 10^{-8}s][1]$$

The referenced data is the full width.

12. Pion Neutral

Pion neutral is atom-like particle

$$\pi^0 : e_{\pi^0} * \nu_r + e_{\pi^0}^* * \nu_l$$

It has mass $4 \times 64m_e$, zero spin and zero MDM. Its decay modes are

$$\pi^0 \to \gamma_r + \gamma_l$$

The loss of energy is kind of L

$$-2\varepsilon_e = \frac{1}{8.39 \times 10^{-17}s} \quad [8.4 \times 10^{-17}s][1]$$

13. tau

τ maybe that

$$\tau_l^+ : e_\tau * (5e_r^+ + \overline{5e_r^+ + e_r^-})$$

Its mass $51 \times 64m_e$, spin 1/2, MDM $\mu_B k_e/k_\mu$. It has decay mode

$$\tau_l^+ \to \mu_l^+ + \nu_l + \overline{\nu_l}$$

$$e_\tau * 5e_r^+ + \overline{e^{ip_1x}} * \overline{e_\mu} * \nu_l + \overline{e^{ip_2x}} * \nu_l \to \overline{e_\tau} * 5e_r^+ + \overline{e_\tau} * e_r^- + e^{ip_1x} * e_\mu * e_l^+ + e^{ip_3x} * \nu_l$$

The energy gap is kind of Ls

$$5 < \overline{e_\tau} * \nabla(e_r^+)^\nu | e^{-ip_1x} * \nabla(e_r^-)_\nu > -5 < \nabla(e_r^+)^\nu | \nabla(e_r^-)_\nu >$$

$$= -\frac{5\varepsilon_e}{k_\tau/k_e}$$

$$= \frac{1}{1\times 10^{-13}s} \quad [2.9\times 10^{-13}s][1]$$

Depending on this kinds of particle including

$$q_r^{n+} := n(e_r^+, \overline{e_r^+})$$

we can construct particles of great mass decaying without strong emission (light radiative), for example

$$e_L * (q_r^{n+}, \overline{e_l^-})$$

This series of particle include μ, τ and in fact almost all light radiative particles are of this kind, they are created in colliding. Another condition is possibly that, in the collision, the created light radioactive particle $(q_r^{n+}, \overline{e_l^-})$ with different n is mixed to some rates as to the detector can't distinguish them.

Because the channel width decides the channel branch rates, obviously the most experimental data violate this rule. So that the channels listing after the same name of a particle in fact belong to different particles.

The particle K^+ possibly is

$$K^+ = (q_r^{3+}, \overline{\nu_l + e_l^-}) \to \mu_r^+ + \overline{\nu_l}$$

It has emission of Ls.

14. Proton

Proton may be like

$$p_r^- : e_p*(e_r^+ + e_r^- + e_l^+ + e_l^- + \overline{e_r^+ + e_r^- + 2e_l^+}) + e_p^* * (\overline{e_r^+ + e_r^- + e_l^+ + e_l^-} + e_r^+ + e_l^+ + e_l^-)$$

The mass is $31\times 64 m_e$ that's very close to the real mass. The MDM is calculated as $3\mu_N$, spin is $1/2$. The proton thus designed is eternal because if it decay even to the finest blocks the energy of emission is negative.

15. Scattering

The scattering can be calculated as dynamic electromagnetic mechanical theory, ie. the magnitude scattered is calculated by the formula 3.1. From the equation 2.1 the operator of current is

$$j^\mu = ie_{/\sigma}A_\mu^*\partial A^\mu - ie_{/\sigma}A^\mu\partial A_\mu^*$$

The reaction is like

$$\sum_i f_i * e_i \to \sum_i f_i' * e_i$$

For example the scattering in some frame

$$e^{ip_1x} * e + e^{ip_2x} * e \to e^{ip_3x} * e + e^{ip_4x} * e$$

$$J_{13} = ie_{/\sigma}A_1^*\partial A_1 + ie_{/\sigma}A_3^*\partial A_3 = -ie_{/\sigma}A_1^*\partial A_3/2 + ie_{/\sigma}A_3^*\partial A_1/2$$

The last harmonic wave A_1, A_3 is extended to whole time axis. The transfer is

$$i\mu \approx \frac{C(p_1'+p_3')^\nu(p_2'+p_4')_\nu}{(p_1'-p_3')^2}$$

The p_i' is the *cap momentum* relative to p_i.

$$iC = e^2 = \frac{\varepsilon_e}{k_e e}$$

The interaction is between A_2. In the mean effect rate of transfer for the normalized scattering is

$$\frac{|\mu|^2}{k_1 \cdot k_2 \cdot k_3 \cdot k_4}$$

16. The Great Unification

The General Theory of Relativity is

$$R_{ij} - \frac{1}{2} R g_{ij} = 8\pi G T_{ij}/c^4 \tag{16.1}$$

for the electromagnet fields:

$$T_{ij} = F_i^{k*} F_{kj} - g_{ij} F_{\mu\nu} F^{\mu\nu^*}/4$$

Firstly we redefine the unit second as S to simplify the equation 16.1

$$R_{ij} - \frac{1}{2} R g_{ij} = T_{ij}$$

We observe that the co-variant curvature is

$$R_{ij} = F_{ik}^* F_j{}^k + g_{ij} F_{\mu\nu}^* F^{\mu\nu}/8$$

17. Conclusion

In my view point the sum-up of the grains (as electrons) of electromagnetic field is expression of mechanic movement. Fortunately this model explained all the effects in the known world: strong, weak and electromagnetic effects, and even subclassify them further if not being to add new ones. In this model the only field is electromagnetic field, and this stands for the philosophical with the point of that unified world is from an unique source. All depend on a simple fact: the current of matter in a system is time-invariantly zero in mass-center frame, then we can devise current of matter to analysis the e-charge current.

Except electron function my description of particles in fact is compatible with Quantum Electromagnetic Mechanics, and they two should reach the similar result. But my theory isn't compatible to the theory of quarks, the upper part of standard model, if not it is calculated in the style of Quantum Electromagnetic Mechanics. In fact, The electron function is a good promotion for the experimental model of proton that went up very early.

Underlining my calculations a fact is that the electron has the same phase (electron resonance), which the BIG BANG theory would explain, all electrons are generated in the same time and place, the same source.

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E-mail address: `sunylock@139.com`

Wuhan University, Wuhan, Hubei Province,The People's Republic of China. Postcode: 430074