Chapter 3

Correction of Inconsistencies

3.1 Correction of the Third Inconsistency

Instead of the unlimited accurately pure mathematical predictions value

$$x = x' = 0 \qquad \text{3-1-1}$$

According to the uncertainty principle $\sigma_x \sigma_p \geq \frac{\hbar}{2}$, we have to use the physically allowed value by

$$\sigma_x = \sqrt{< \hat{x}^2 > - < \hat{x} >^2}, \quad \sigma_p = \sqrt{< \hat{p}^2 > - < \hat{p} >^2} \qquad \text{3-1-2}$$

Therefore, we can rewrite Eq. 3-1-1 as $x = x' = \pm \frac{x_{\Delta o}}{2}$. where ± represents the distribution range of the indeterminate values $x_{\Delta o}$, $x_{\Delta o}$ is the values from σ_x.

From this, we obtain

$$\Delta x_{\text{co}} = \pm \frac{x_{\Delta \text{o}}}{2} \qquad \text{3-1-3}$$

By the factor "co", uncertainty degree $\Delta x, \Delta x'\ and\ \Delta x_o$ is changed to $x, x'\ and\ x_{\Delta o}$ from probability density function $|\psi|^2$ by 6 axioms of quantum mechanics.

$$x = x' = \Delta x_{\text{co}} \qquad \text{3-1-4}$$

$$x' = x \mp \frac{x_{\Delta \text{o}}}{2} \qquad \text{3-1-5}$$

The term $x' = x - vt$ is replaced by $x' = x - vt \mp \frac{x_{\Delta \text{o}}}{2}$, so

$x = x' + vt' \rightarrow\rightarrow\rightarrow x = x' + vt' \pm \frac{x_{\Delta 0}}{2}$ 3-1-6

$x' = k(x - vt) \rightarrow\rightarrow\rightarrow x' = k(x - vt \mp \frac{x_{\Delta 0}}{2})$ 3-1-7

$x = k(x' + vt') \rightarrow\rightarrow\rightarrow x = k(x' + vt' \pm \frac{x_{\Delta 0}}{2})$ 3-1-8

To obtain t', we insert Eq. 3-1-6 into Eq. 3-1-7; that is,

$t' = kt + x\left(\frac{1-k^2}{kv}\right) \pm \frac{kx_{\Delta 0}}{2v} \mp \frac{x_{\Delta 0}}{2v}$ 3-1-9

where $\frac{x_{\Delta 0}}{2v} = \frac{t_{\Delta 0}}{2}$

$t' \pm \frac{t_{\Delta 0}}{2} = kt + x\left(\frac{1-k^2}{kv}\right) \pm \frac{kx_{\Delta 0}}{2v}$ 3-1-10

Now, to determine the *k* value, we can compare the same light speed observed in two frames

$x = ct, \quad x' = ct', t = t' = 0$ 3-1-11

However, because this is physically meaningless, we should use

$t = t' = \pm \frac{t_{\Delta 0}}{2}$ 3-1-12

From $\Delta t, \Delta t', \pm \frac{\Delta t_0}{2}$

Thus, instead of $x = ct$, we use $x = c(t \pm \frac{t_{\Delta 0}}{2})$

$x' = ct' \rightarrow\rightarrow\rightarrow x' = c(t' \mp \frac{t_{\Delta 0}}{2})$ 3-1-13

However,

$t' \pm \frac{t_{\Delta 0}}{2} = kt + x\left(\frac{1-k^2}{kv}\right) \pm \frac{kx_{\Delta 0}}{2v}$ 3-1-14

$$t' \mp \frac{t_{\Delta 0}}{2} = kt + x\left(\frac{1-k^2}{kv}\right) \mp \frac{kx_{\Delta 0}}{2v} \qquad 3\text{-}1\text{-}15$$

Now we can insert Eqs. 3-1-2 and 3-1-7 into Eq. 3-1-16 to obtain Eq. 3-1-17

$$x' = c(\,t' \mp \frac{t_{\Delta 0}}{2}) \qquad 3\text{-}1\text{-}16$$

$$k\,(x - vt \mp \frac{x_{\Delta 0}}{2}) = c\,[kt + x\,(\frac{1-k^2}{kv}) \mp \frac{kx_{\Delta 0}}{2v}] \qquad 3\text{-}1\text{-}17$$

These can then be expanded about *k*; that is,

$$kx\,[1 - (\frac{c}{v})\,(\frac{1}{k^2} - 1)] = k\,(ct \pm \frac{x_{\Delta 0}}{2})\,[1 + \frac{vt}{ct \pm \frac{x_{\Delta 0}}{2}} \mp \frac{(\frac{x_{\Delta 0}}{2v})}{ct \pm \frac{x_{\Delta 0}}{2}}] \qquad 3\text{-}1\text{-}18$$

$$1 - (\frac{c}{v})\,(\frac{1}{k^2} - 1) = 1 + \frac{vt}{ct \pm \frac{x_{\Delta 0}}{2}} \mp \frac{\frac{cx_{\Delta 0}}{2v}}{ct \pm \frac{x_{\Delta 0}}{2}}$$

$$\frac{1}{k^2} - 1 = -(\frac{v}{c})\,(\frac{vt}{ct})\,(\frac{1}{1 \pm \frac{x_{\Delta 0}/2}{ct}}) \mp \frac{(\frac{c}{v})\,(-\frac{v}{c})\,(\frac{x_{\Delta 0}}{2})}{(ct \pm \frac{x_{\Delta 0}}{2})}$$

$$= -\frac{v^2}{c^2}\,(\frac{\text{ct}}{ct \pm \frac{x_{\Delta 0}}{2}}) \pm (\frac{-\frac{x_{\Delta 0}}{2}}{(ct \pm \frac{x_{\Delta 0}}{2})})$$

$$\frac{1}{k^2} = 1 - \frac{v^2}{c^2}\,(\frac{ct \mp z\frac{x_{\Delta 0}}{2}}{ct \mp \frac{x_{\Delta 0}}{2}}), \qquad \frac{c^2}{v^2} = \text{Z} \qquad 3\text{-}1\text{-}19$$

When $\alpha = \frac{ct \mp z\frac{x_{\Delta 0}}{2}}{ct \pm \frac{x_{\Delta 0}}{2}}$, $\frac{\Delta m_{\text{co}}}{\Delta m_{\text{co}}} = \frac{m_{\text{c}\Delta o}}{m_{\text{c}\Delta o}} = 1$, $c\Delta t_{\text{co}} = ct_{\text{c}\Delta\text{o}} = x_{\text{c}\Delta\text{o}}$ 3-1-20

By factor "co" or "cΔo" $\Delta m, \Delta t$ is changed to $m_{\Delta\text{o}}, t_{\Delta\text{o}}$ or $m_{\text{c}\Delta\text{o}}, t_{\text{c}\Delta\text{o}}$

From $x - x' = \pm\frac{x_{\Delta 0}}{2}$, when $v \rightarrow c$, $x' \rightarrow 0$ according to relativity. Thus, $x \approx \pm\frac{x_{\Delta 0}}{2}$ and $ct = \Delta x_{\text{co1}} = x_{\text{c}\Delta\text{o1}}$

Hence,

$$\alpha = \frac{\Delta m_{co}ct \mp z\Delta m_{co}\frac{x_{c\Delta 0}}{2}}{\Delta m_{co}ct \pm \Delta m_{co}\frac{x_{c\Delta 0}}{2}}$$

$$= \frac{\Delta m_{co}\Delta x_{c\Delta o1}\,[1 \mp \{(z\Delta m_{co}\Delta x_{co})/\Delta m_{co}\Delta x_{c\Delta o1}\}]}{\Delta m_{co}\Delta x_{c\Delta o1}\,[1 \pm \{(\Delta m_{co}\Delta x_{co})/\Delta m_{co}\Delta x_{c\Delta o1}\}]} \qquad 3\text{-}1\text{-}21$$

Because $\Delta mv\Delta x \geq \frac{\hbar}{2}$, $\Delta m\Delta x \geq \frac{\hbar}{2v}$,

$$\Delta x_{co1} = ct,\ (c\Delta o)(co\Delta 1) = 1 \qquad 3\text{-}1\text{-}22$$

$\Delta x_{c\Delta o1} = ct$ is a special value of the maximum limit value.

$\Delta m_{c\Delta o}\Delta x_{c\Delta o1}$ is another expression of the initial maximum value when $\Delta m\Delta x = 1$ (cf. §7.10). $\Delta m_{co}\Delta x_{co1} = (\Delta m\Delta x)\,[(c\Delta o)(c\Delta o_1)] = 1$.

So we can have

$$\alpha = \frac{1-(\frac{z\hbar}{2v})_{co}}{1+(\frac{\hbar}{2v})_{co}} \qquad 3\text{-}1\text{-}23$$

When $\frac{\hbar}{2v}$ is always smaller than 1 (viz., $\frac{\hbar}{2v} < 1$), if $|\quad|$ is a dimensionless number, then

$$\alpha = (1 - \left|\frac{\hbar}{2v}\right|)\,(1 - \left|\frac{z\hbar}{2v}\right|),\quad \alpha_z = (1 - 2\left|\frac{z_2\hbar}{2v}\right|) \qquad 3\text{-}1\text{-}24$$

when z =1, then

$$\alpha_{z_1} = (1 - 2\left|\frac{\hbar}{2v_c}\right|) \qquad 3\text{-}1\text{-}25$$

and usually

$$k = \frac{1}{\sqrt{1-\frac{v^2}{c^2}\alpha}} \qquad 3\text{-}1\text{-}26$$

This is the result of a new relativity theory that corrects the inconsistency of position. This new theory is called the force line special relativity theory, and is compatible with quantum theory by the factor $\hbar$ of α in k.

3.2 Correction of the Fifth Inconsistency

Formula 3-1-9 can now be applied to the case discussed in §1.3; that is, to correct the inconsistency of curved space. The first step is to correct the relativistic velocity transformation formula. That is,

$$t' = kt + x\left(\frac{1-k^2}{kv}\right) \mp \frac{x_{\Delta 0}}{2v}(1-k) \qquad \text{3-2-1}$$

$$k = (1 - \frac{v^2}{c^2}\alpha)^{-½} \qquad \text{3-2-2}$$

$$t' = t\,(1 - \frac{v^2}{c^2}\alpha)^{-½} + x\,[\frac{1-[(1-\frac{v^2}{c^2}\alpha)^{-½}]^2}{v\,(1-\frac{v^2}{c^2}\alpha)^{-½}}] \mp \frac{x_{\Delta 0}}{2v}[1-(1-\frac{v^2}{c^2}\alpha)]$$

$$= (1 - \frac{v^2}{c^2}\alpha)^{-½}\,(t - \frac{v\alpha x}{c^2} \mp \frac{n x_{\Delta 0}}{2v})$$

$$n = \sqrt{1 - \frac{v^2}{c^2}\alpha} - 1 \qquad \text{3-2-3}$$

Therefore,

$$dt' = (1 - \frac{v^2}{c^2}\alpha)^{-½}\,(dt - \frac{v\alpha dx}{c^2} \mp \frac{n dx_{\Delta 0}}{2v}) \qquad \text{3-2-4}$$

Meanwhile,

$$x' = k\,(x - vt \mp \frac{x_{\Delta 0}}{2}) \qquad \text{3-2-5}$$

$$dx' = (1 - \frac{v^2}{c^2}\alpha)^{-½}\,[dx - vdt \mp d(\frac{x_{\Delta 0}}{2})] \qquad \text{3-2-6}$$

so

$$U_{x'} = \frac{d_{x'}}{d_{t'}} = \frac{(1-\frac{v^2}{c^2}\alpha)^{-\frac{1}{2}}[dx - vdt \mp d(\frac{x_{\Delta 0}}{2})]}{(1-\frac{v^2}{c^2}\alpha)^{-\frac{1}{2}}[dt - \frac{v\alpha dx}{c^2} \mp \frac{ndx_{\Delta 0}}{2v})} \qquad 3\text{-}2\text{-}7$$

$\frac{d_{t'}}{d_{t'}}$ = 1 multiplied. 3-2-8

$$U_{x'} = \frac{(1-\frac{v^2}{c^2}\alpha)^{-½}(\frac{dx}{dt} - v\frac{dt}{dt} \mp \frac{d(\frac{x_{\Delta 0}}{2})}{dt})}{(1-\frac{v^2}{c^2}\alpha)^{-½}(\frac{dt}{dt} - \frac{v\alpha dx}{c^2 dt} \pm \frac{nd(\frac{x_{\Delta 0}}{2})}{vdt})} \qquad 3\text{-}2\text{-}9$$

$$= \frac{U_x - v \mp \frac{\Delta U_x}{2}}{1 - \frac{v\alpha U_x}{c^2} \pm z\frac{\Delta U_x}{2}} \qquad 3\text{-}2\text{-}10$$

$$U_{y'} = \frac{d_{y'}}{d_{t'}} = \frac{d_{y'}}{(1-\frac{v^2}{c^2}\alpha)^{-½}(dt - \frac{v\alpha dx}{c^2} \pm \frac{ndx(\frac{x_{\Delta 0}}{2})}{v})} \qquad 3\text{-}2\text{-}11$$

$\frac{d_{t'}}{d_{t'}}$ = 1 multiplied

$$U_{y'} = \frac{\frac{d_{y'}}{d_{t'}}}{(1-\frac{v^2}{c^2}\alpha)^{-½}(\frac{dt}{d_{t'}} - \frac{v\alpha dx}{c^2 dt} \mp \frac{nd(\frac{x_{\Delta 0}}{2})}{vdt})} \qquad 3\text{-}2\text{-}12$$

$$= \frac{U_{y'}\sqrt{1-\frac{v^2}{c^2}\alpha}}{1-\frac{vdu}{c^2} \pm z\frac{U_{\Delta x}}{2}} \qquad 3\text{-}2\text{-}13$$

Now when these results are applied to the case discussed in §1.3, we obtain

$$U_{\text{ax}} = \frac{dv_x - v_x \mp \frac{v_{\Delta x}}{2}}{1 - \frac{v_x \alpha dv_x}{c^2} \pm z\frac{v_{\Delta x}}{2}} \cong v \qquad 3\text{-}2\text{-}14$$

$$U_{\text{ay}} = \frac{dvy\sqrt{1-\frac{v^2}{c^2}\alpha}}{1-\frac{v\alpha dv_x}{c^2} \pm z\frac{v_{\Delta x}}{2}} \cong dv\sqrt{1-\frac{v^2}{c^2}}\alpha \qquad 3\text{-}2\text{-}15$$

$$U_{\mathrm{bx}} = \frac{v_x \sqrt{1 - \frac{dv_y^2}{1-c^2}\alpha}}{1 - \frac{dv_y \alpha\, v_y}{c^2} \pm z\frac{v_{\Delta x}}{2}} \cong -v\sqrt{1 - \frac{dv^2}{c^2}}\,\alpha \qquad 3\text{-}2\text{-}16$$

$$U_{\mathrm{by}} = \frac{v_y - dv_{\mathrm{y}} \mp \frac{v_{\Delta x}}{2}}{1 - \frac{dv_y\, \alpha v_y}{c^2} \pm z\frac{v_{\Delta x}}{2}} \cong -dv \qquad 3\text{-}2\text{-}17$$

When Eqs. 3-2-14 through 3-2-17 are applied to the case of light deflection by the sun, we get the following:

Because $v = c$,

$$U_{\mathrm{ax}} \cong c, \quad U_{\mathrm{ay}} \cong dv\sqrt{\left|\frac{\hbar}{c}\right|} \qquad 3\text{-}2\text{-}18$$

Namely, when the velocity v is the speed of light c, there are very small fine relative movements of the y-axes, so this is a meaningful significant difference with the classical theory of general relativity. When the velocity is c, the classical general relativity theory does not allow any relative movement of the y-axes, but Eq. 3-2-15 of the new general relativity theory allows for very small fine relative movements of the y component even for a photon when light passes near the sun. Under such physical condition, there does not allow such analysis that space is curved. In the case of uncurved space, the relative curved angle $d\theta$ between both frames by magnetic divergence (cf.§18.8,§20.3)is

$$d\theta \cong \frac{dv_{\odot}}{c} \qquad 3\text{-}2\text{-}19$$

On one side, the light diffraction value by the sun's gravito spin force line is

$$\theta_n = \frac{dV_{\odot}}{c} \cong \frac{2GM_{\odot}}{c^2 R_{\odot}} \qquad 3\text{-}2\text{-}20$$

Hence, the total value is

$$\theta_{\mathrm{f}} = d\theta + \theta_n \cong \frac{dv_{\odot}}{c} + \frac{dv_{\odot}}{c} \cong \frac{2Gm_{\odot}}{c^2 R_{\odot}} + \frac{2Gm_{\odot}}{c^2 R_{\odot}} \cong \frac{4Gm_{\odot}}{c^2 R_{\odot}} \qquad 3\text{-}2\text{-}21$$

Consequently, even without curved space theory, we can obtain good results that agree with the experiment. This is a result of the corrected general theory of relativity. The force line theory of special relativity applies to a system of acceleration without curved space, called the force line theory of general relativity.Here, we know that the reason for the double value of light diffraction by the sun, as explained by the classical relativity theory, is not curved space (other proof by gauge symmetry cf. §6.2). The real reason for the double value is the relative curve of force line, as predicted by the new relativity theory and by Newtonian free-fall of a photon by an unknown physical process. This result can be expressed with a simple illustration of a rocket experiment as Figure 3-2-1(cf.§20.3).

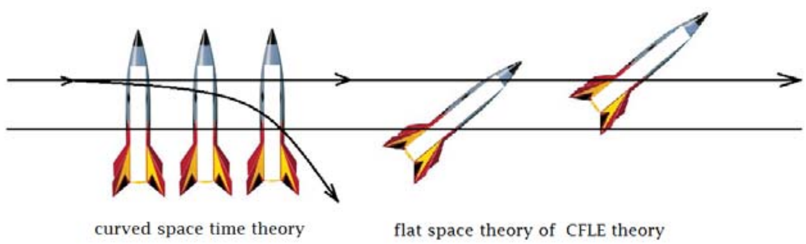

Figure 3-2-1 Difference between rockets of classical theory with curved space and flat space theory of curved force lines.

In Figure 3-2-1, we can see that the effects of double-fall predicted by the curved force line elements (CFLE) theory and the curved space theory are quantitatively the same.

3.3 Correction of the Fourth Inconsistency

The mathematical term $k = (1 - \frac{v^2}{c^2}\alpha)^{-½}$ eliminates destructive infinity, because the denominator is not zero, when velocity is $v = c$. This makes it possible for a photon to have unlimited quantized kinetic energy and quantized rest mass. When velocity is $v = c$, we can obtain

$$k = [1 - \frac{v^2}{c^2}(1 - \left|\frac{\hbar}{2v}\right| - \left|\frac{z\hbar}{2v}\right|)]^{-½} \Rightarrow [1 - \frac{c^2}{c^2}(1 - \left|\frac{\hbar}{2c}\right| - \left|\frac{\frac{c^2}{c^2}\hbar}{2c}\right|)]^{-½}$$

$$= (\left|\frac{\hbar}{c}\right|)^{-½} \quad 3\text{-}3\text{-}1$$

where $c = 2.99792458 \times 10^8$ m/s

and $\hbar = \frac{6.626176 \text{ x } 10^{-34} \text{ Js}}{2\pi}$

Therefore,

$$k = \left(\frac{\frac{6.626176 \times 10^{-34} \text{ Js}}{2\pi}}{2.99792458 \times 10^8 \text{m/s}}\right)^{-½}$$

$= 1.686044 \times 10^{21}$ (pure dimensionless number) 3-3-2

The energy that a photon can have according to quantum theory and relativity theory is

$E = \hbar\nu$, $E = mc^2$ 3-3-3

However, according to formula 3-3-1, a photon can have quantized rest mass and its kinetic mass from spin angular momentum$\pm\hbar$. With this given rest mass by coupling with goldstone boson, a photon can have gravitational interaction between its rest mass and gravitational field through a still unknown physical process (cf. §6.2,§18.8 where the mass less gauge particle photon becomes massive grain is explained).

However, we can find here that the new theory allows symmetry breaking of a gauge particle. Therefore, the new theory of relativity is compatible with any gauge theory. In addition, Eq. 3-1-26 has a significant distinction against classical relativity theory at the point that allows movement of a massive particle with light speed $v = c$. For example, although a neutrino has rest mass, it can move with speed $v = c$. This is significant when considering the meaning of the full result obtained from the new force line theory of general relativity.

We can therefore now calculate the bar mass of an electron for a simplest particle from nature that has no substructure and is moving with speed $v = c$:

$m_e = (9.109534 \times 10^{-31} \text{ kg}) (1.686044 \times 10^{21})$

$= 1.535908 \times 10^{-9}$ kg$= 8.64 \times 10^{26}$ eV/c^2

$= 8.64 \times 10^{17}$ GeV/c^2 3-3-4

This mass is called the bar mass of the electron at maximum curved coordination system $g = 8$. Same times this mass is equivalent 1 C electric charge.

This mass at coordination system of perfect curve of force line $g = 8 \times 1.5$ (cf.§5)with gravitational permittivity $x_g = 1.1809$(cf.Eq3-3-10) is

$m_{e.curve}$= (1.535908 × 10^{-9} kg)(14.1708)

$=2.17650\times10^{-8}$ kg = 1.22× 10^{19} GeV/c^2 3-3-5

The electron size at this moment is

$$\Delta x \geq \frac{\hbar}{2\Delta mc} = \frac{1.054589\ \ 10^{-34}\ \mathrm{Js}}{2(1.535908 \times 10^{-9}\ \mathrm{kg})(2.99792458 \times 10^{8}\mathrm{m/s^2})}$$

$= 1.145163 \times 10^{-34}$ m 3-3-6

$\Delta xco = 1.145163 \times 10^{-34}$ m 3-3-7

Planck mass by $m_p = \sqrt{\frac{\hbar c}{G}}$ is

$m_p \approx 1.2209\times10^{19}$ GeV/c^2 =21.7651μg =2.17651(13) $\times10^{-8}$ kg 3-3-8

Different between bar mass of electron and Planck mass is

$$d_m = \frac{21.7651\times10^{-9}\ \mathrm{kg}}{1.535908 \times 10^{-9}\mathrm{kg}} = 14.1708$$ 3-3-9

where factor of 14.1708 is curve of gravitational force line $g = 8$ (cf.§) and correspondence number $c_c = 1.5$(cf.§)and gravitational permittivity of air at $g = (8 \times 1.5)$(cf.§ 5)x_g =1.201288 and $x_g = 1.016774$ at$g = 1$ (cf.§)and electrical permittivity of air at $g = 1$

Total effect is

$$f_{eff} = (8 \times 1.5)\left(\frac{1.20129}{(1.01677)(1.000589)}\right) = 14.170 \qquad 3\text{-}3\text{-}10$$

Finally speaking, Planck mass is only perfect bar mass of electron's charge.

Therefore, by Planck mass is proved that formula 3-3-1 and quantum special relativity $k = \frac{1}{\sqrt{1-\frac{v^2}{c^2}\alpha}}$ is correct.

In 1905 formula$E = mc^2$ and $E = \hbar f$ was suggested by same scientist named A. Einstein as energy of rest mass from special relativity and photon energy from photo electric effect.

Light speed c is distinctive feature of theory relativity; Planck constant $\hbar$ is identifying mark of quantum theory. The problem between these two theories is serious illness of modern physics.

Nowadays, everybody know about two formula $E = mc^2$and$E = \hbar f$.

Therefore, unified theory of relativity and quantum theory must be

$$mc^2 = \hbar f, \quad m = \frac{\hbar f}{c^2} \qquad 3\text{-}3\text{-}11$$

This unified relation was known from Einstein's age.

However, why we cannot find true relation between theory of relativity and quantum theory to date?

Because we cannot see what this formula $m = \frac{\hbar f}{c^2}$ truly say us.

That is

$$m = \frac{\hbar f}{c^2} = \frac{\hbar}{c}\frac{f}{c} = \frac{\hbar}{c}\frac{1}{\lambda}, \; m\lambda = \frac{\hbar}{c} \qquad 3\text{-}3\text{-}12$$

According to Einstein's assertion that light is particle

$$m\lambda = \frac{\hbar}{c} \to mx = \frac{\hbar}{c} \qquad 3\text{-}3\text{-}13$$

Now, right term is only constant.

According to special theory of relativity of CFLE theory mass of fundamental particle was decreased and size was increased from initial state of early universe. Therefore, we can express limit of mass decreasing and size increasing to final state of present universe

$$m^{\downarrow}x^{\uparrow} = \frac{\hbar}{c} \qquad 3\text{-}3\text{-}14$$

This formula shows that Einstein's special relativity is wrong, because we cannot find Planck constant in his special theory of relativity. This formula says that Einstein's relativity should be reconstructed.

For real limit of relativistic quantity mx change to obtain we can rewrite this formula dimensionless

$$|m^{\downarrow}||x^{\uparrow}| = \left|\frac{\hbar}{c}\right| \qquad 3\text{-}3\text{-}15$$

This formula says us that initial mass of particles of early universe was decreased and size was increased by Big-Bang as much as

$$\left|\frac{\hbar}{c}\right| = \frac{1.054589\times10^{-34}}{2.99792458\times10^{8}} = 3.517730\times 10^{-43} \qquad 3\text{-}3\text{-}16$$

Because mass and size must be changed same time, limit for each physical property is

$$l_{m.x} = \sqrt{\left|\frac{\hbar}{c}\right|} = \sqrt{3.517730 \times 10^{-43}}$$

$$=5.931045\times 10^{-22} \qquad 3\text{-}3\text{-}17$$

For initial state of mass (bar mass) to obtain we can use

$$m_{initial} = (m_{present})(\frac{1}{5.931045\times10^{-22}})$$

$$= \left(m_{present}\right)(1.686044\times 10^{21}) \quad 3\text{-}3\text{-}18$$

Therefore, permitted mass increasing is only 1.686044×10^{21}times by size decreasing as much as$1/1.686044\times 10^{21}$times.

This result is same result of special relativity of CFLE theory Eq.3.3.1

According to de Broglie particle have wave nature. Therefore, physical property of mx must be changed from Eq. 3-3-13 $m\lambda = \frac{\hbar}{c} \rightarrow mx = \frac{\hbar}{c}$ to

$$[m\lambda = \frac{\hbar}{c} \rightarrow mx = \frac{\hbar}{c}] \rightarrow [\ mx = \frac{\hbar}{c} \rightarrow m_w\lambda = \frac{\hbar}{c}] \quad 3\text{-}3\text{-}19$$

Therefore, particle properties is changed wave properties as uncertainty principle

$$\Delta mv\Delta x \geq \hbar \quad 3\text{-}3\text{-}20$$

Because Einstein's special relativity is established by Newton's inertial law,we can rewrite this principle at view point of unified state of universe

$$\Delta m\Delta x \geq \frac{\hbar}{v} \quad 3\text{-}3\text{-}21$$

For limit of uncertainty to obtain we can rewrite

$$[\Delta m\Delta x \geq \frac{\hbar}{v}] \rightarrow [\Delta^{\downarrow}m\Delta^{\uparrow}x \geq \frac{\hbar}{c}] \rightarrow [\left|\Delta^{\downarrow}m\right|\left|\Delta^{\uparrow}x\right| \geq \left|\frac{\hbar}{c}\right|] \quad 3\text{-}3\text{-}22$$

Now, result of rewrite $\left|\Delta^{\downarrow}m\right|\left|\Delta^{\uparrow}x\right| \geq \left|\frac{\hbar}{c}\right|$ is same result of special theory of relativity of CFLE theory.

This formula say us that limit of uncertainty degree is same as much as limit of mass decreasing (charge screening) and size increasing (force line absorbing) from early universe to present universe. Furthermore physical cause of relativity and uncertainty is same source.

For physical equality logically to satisfy according to formula $m\lambda = \frac{\hbar}{c}$ $\leftrightarrow$ $mx = \frac{\hbar}{c}$, special theory of relativity must be contained Planck constant $\hbar$. However, Einstein's special theory of relativity doesn't contain Planck constant $\hbar$. Therefore Einstein's special theory of relativity becomes wrong theory.

Photon and neutrino can move speed of $c = 2.99792458 \times 10^8 m/s$ with its quantized rest mass.

Formula $E = mc^2$and$E = \hbar f$ is result of separated phenomena.

However, formula $[m\lambda = \frac{\hbar}{c} \leftrightarrow mx = \frac{\hbar}{c}]$ from $mc^2 = \hbar f$ say us meaningful mass change history of universe. This formula $m\lambda = \frac{\hbar}{c}$ want tell us that length of wave has ability of rest mass change by charge (mass) screening.

Therefore, according to Eq.3-3-22 problem of infinite interval of integral or renormalization problem in wave function can theoretically physically be restricted. Permitted maximum integrate interval$\int_{x_i}^{x_f} dx$ is $\sqrt{\left|\frac{\hbar}{c}\right|}$ $\sim$1 or 1$\sim\frac{1}{\sqrt{\left|\frac{\hbar}{c}\right|}}$. This is important theoretical base of effective quantum field theory.