Thesis

About a definition in time

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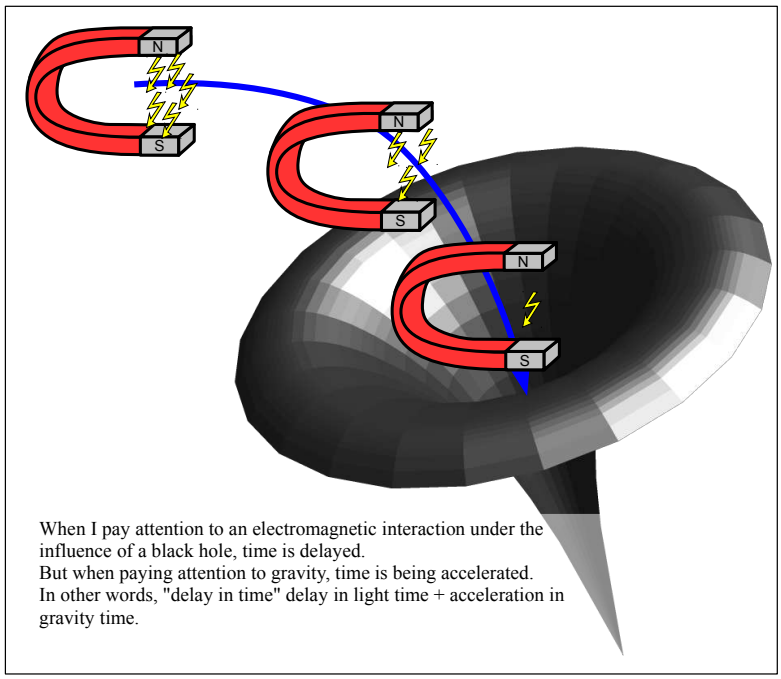
Abstract

The definition in time in the present-day physics is insufficient. Several problems which are to reconsider a definition in time and concern in time can be settled. This definition isn't inconsistent with general relativity. 4 are supposed. This isn't also inconsistent with general relativity. Mystery in the life expectancy of the neutron can be settled by this. Several dilemmas which concern at time can be settled. It's possible to deepen the understanding simpler than the one of the general relativity.



When I pay attention to an electromagnetic interaction under the influence of a black hole, time is delayed.
But when paying attention to gravity, time is being accelerated.
In other words, "delay in time" delay in light time + acceleration in gravity time.

1. Introduction

Time is the basic amount of the physics.But the definition is ambiguous.It's necessary to use some physical changes to measure time.The one by which time uses speed of light for measurement is general.But physical behavior in time has a strange point.Correction is necessary for handling in time.

Problem(1) That a flow in time changes under the strong gravity.That a flow in time changes during movement.The reason isn't self-evident.

Problem(2) Retrogression in time be permitted.

Problem(3) Failure of general relativity by a peculiar point of a black hole.

Problem(4) Change in the life expectancy of the neutron.

Interpretive procedure of these problems is proposed by the main subject.

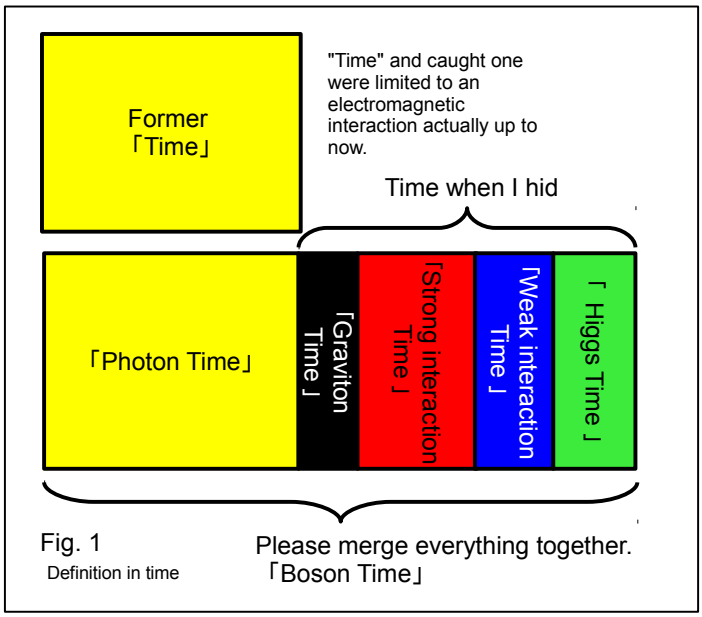


Fig. 1
Definition in time

2. Demonstration

1) Definition in time

A physical change is needed to know time.But we depend on only an electromagnetic interaction for a definition in time too much.This is unnatural.Everything is equal with the electromagnetic interaction, the gravitational interaction, the strong interaction and the weak interaction.Measurement is difficult for whether the gravitational interaction, the strong interaction and the weak interaction are weak.Therefore it isn't usually used for a definition in time.

But it's talk limited to an electromagnetic interaction that the time course of the object seized with a black hole is behind schedule.In other words, if time is measured by gravity, time is advanced in the black hole.

I can think there are no reasons that it's limited to the electromagnetic interaction when defining time.

(1). Boson time

A chemical change, a quartz watch and stiffness of a metal component are an electromagnetic interaction.I come near here and propose a definition in time which is universal and doesn't depend on electromagnetic interaction.The basic interaction defines time as the number of the possible boson particle.When I paraphrase,「"Time = action number of possible bosons".When doing the different way of speaking, it's "minimum waiting of time = basic reciprocity, interval".This will be called "boson time" temporarily (Fig. 1).This has several supposition.

Supposition 1: Interaction possible boson number Tn is decided at the same time to 1 fundamental particle.This is the number of more than 1, but if it's in less than 0, I don't have that and have the upper limit.And there is length the moment a maximum boson acts on 1 fundamental particle exclusively.This is Planck time.The physical interaction can't be defined small timewise any more.

Supposition 2: The total number of the boson by which a reciprocal action is possible is also decided to 1 fundamental particle, and this is also Tn.In other words, the interaction of the boson is exclusive each other.For example an action of gravity interferes with an action of a photon.

Supposition 3: [Something which can be called "time" at this universe, more than one, only the number of the boson has that and can define time.These are a total in each time at boson time.Time measured by an electromagnetic interaction is photon time.Time measured by gravitational interaction is graviton time.In other words,

$T_B = T_p + T_g + T_s + T_w + T_h$
T_B = Boson Time
T_p = Photon Time
T_g = Graviton Time
T_s = Strong interaction Time
T_w = Weak interaction Time
T_h = Higgs Time

Supposition 4: The phenomenon to which I say that gain in time is behind schedule (It becomes late.) means that the number of particles which act decreases.A flow in time in the relativism (photon time) is clocked by movement of light.Since putting it in the relativism, it's recognized that photon time becomes delayed and speedy.One step of this is advanced and delay of a flow in time is defined as

decrease of the number of particles which acts simply.In other words, it's said that a remaining reciprocal action is obstructed by gravity at the territory where I'm strong in gravity (Fig. 2).

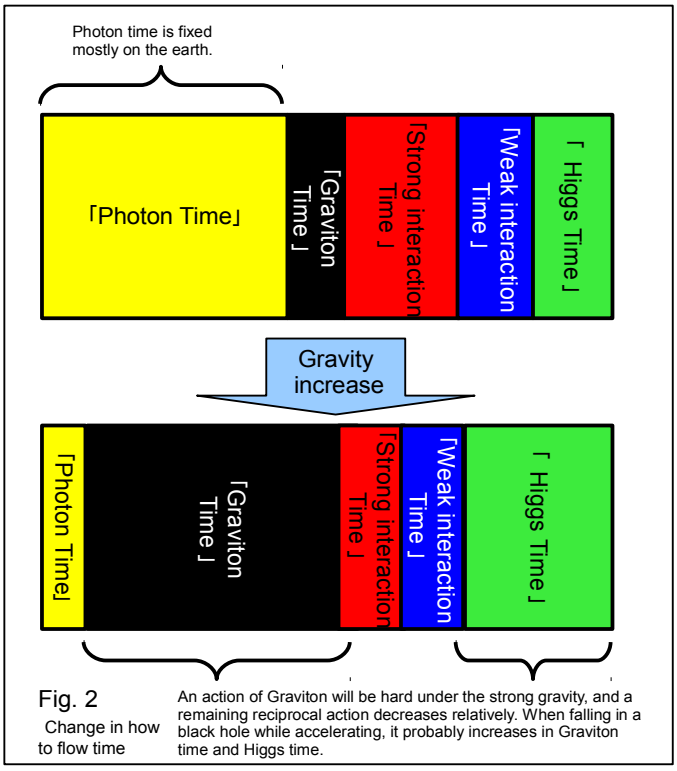


Fig. 2
Change in how to flow time

An action of Graviton will be hard under the strong gravity, and a remaining reciprocal action decreases relatively. When falling in a black hole while accelerating, it probably increases in Graviton time and Higgs time.

Further, if it's a boson in the present, the Higgs boson isn't checked.But the way where I thought it was the fifth basic interaction even if I said because an action like gravity was indicated, is simple.The Higgs boson is made a boson by writing and Higgs time is defined.

2) The utility of this definition

The point that time in the general relativity and behavior of light are strange can explain clearly that the above mentioned definition (boson time) is used.

(1). Negative time isn't permitted.

To be defined by the number of the boson, boson time doesn't become substantial in the negative.In other words, time retrogression is bad inevitably.A flow in time which flows through the universe is as a result of the causality between the substances through a boson.Various dilemmas with time retrogression will be a just meaningless question.

(2). Equivalence of the acceleration can be interpreted as gravity more clearly.

Equivalence of gravity and the acceleration can be named as an important viewpoint of general relativity.When this is based on a definition in boson time, ", the influence to which it's given at photon time is equivalent in gravitational interaction and the Higgs interaction.In other words, the interpretation that both interactions obstruct an electromagnetic interaction and delay photon time consists.

(3). Time will be the direct explanation of being late by gravity.

When following a definition in boson time, you can explain specifically that gain in time becomes slow in the strong gravity bottom.Strong gravity is the space where the graviton density is thick extremely(Fig. 3).

An electromagnetic interaction will be less and be the

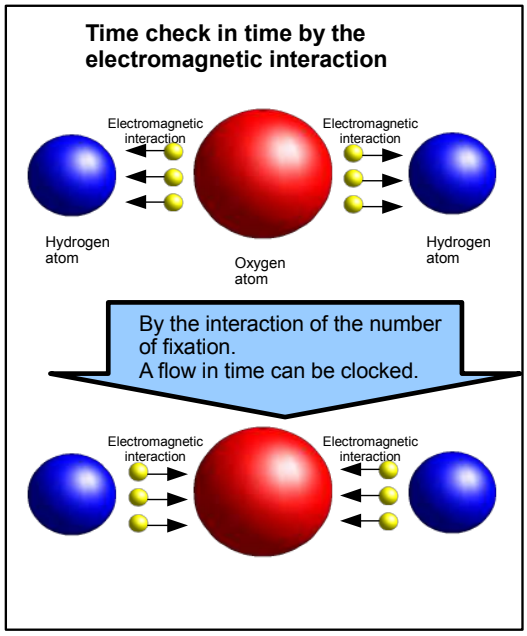


Fig. 3
Image of a time check in photon time by the photon

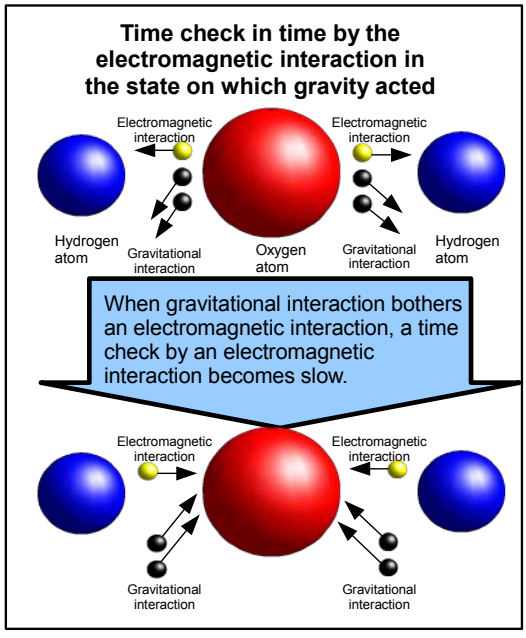


Fig. 4
The image with late photon time

result with late photon time under the strong gravity (Fig. 4).When this is applied to equation

$$\Delta t' = \sqrt{1-\left(\frac{v}{c}\right)^2}\,\Delta t$$

where time indicates delay, it starts to be the next.

Photon Time = Δt_p、Higgs Interaction = v
Graviton Interaction = g　Strong Interaction = s、
Weak Interaction = w

$$\Delta t_p' = \sqrt{1-\left(\frac{v+g+s+w}{c}\right)^2}\,\Delta t_p$$

(4). A spatial warp becomes easy to understand.

Delay in time is the distortion of the space in other words based on relativism.When classifying time into 5, it's also necessary to see space as 5 kinds of spatial pile of course.For example it's possible to paraphrase an observation of an observation act gravity wave so on September 14, 2015."Photon space of an interferometer of LIGO warped by the gravity child who was released from the black hole binary star from which it's 1,300,000,000 light-years away, and photon time was postponed.".Space-time continuum seems to become easier to imagine.

(5). Gain in time won't be 0 in every kind of case.

Where in space doesn't time also stop in boson time.If photon time which are black holes is boundless, and one under the conditions which approach 0 use boson time for calculation, I can think it's possible to stop an emission of the price by time's becoming 0.For example I'll think about an equation of the energy of the general relativity and the mass $E = \frac{mc^2}{\sqrt{1-\left(\frac{v}{c}\right)^2}}$.

When general relativity is applied inside the black hole, time (t is photon time time of this system.) will be 0 in the black hole, and speed v is divergent and is a peculiar point infinitely.When t is changed appropriately at boson time, I can think a right solution is obtained according to the boson.

(6). Theory of gravity in the origin of the quantum territory and the universe is complemented.

When boson time is right, photon time of the particle and graviton time change at the quantum territory with which "the strong interaction" and "the weak interaction" are being concerned, and you shouldn't be able to apply general relativity.I can think it's necessary to consider boson time and calculate.

(7). It can be explained about the life expectancy of the neutron.

The life expectancy of the neutron is fixed mostly about the case in the atomic nucleus.But when only a neutron is observed independently, I come to have the short life extremely compared with time in the atomic nucleus.The life expectancy isn't fixed by method for measurement.For the strong interaction to act on it strong, when a neutron is in the atomic nucleus, this can understand time to the beta decay the weak interaction is obstructed, and to extend.And when an independent neutron is freed from a chain as the strong interaction, you can understand the mutual reaction time with the to work big and to be weak weak interaction to become speedy.

3. Inspection

Even if it's had and done by present-day science and technology unfortunately to inspect this theory, you can't experiment easily at home.It's only a little difficult, but the way to inspect theory is proposed.

1) Gravity is obstructed by a strong electromagnetic interaction.

When supposition of the main subject is right, gravity can be obstructed by an electromagnetic interaction.But, very weakly, gravity of the object which I make the inspection subject has to prepare one of measurement of very precise gravity or a very strong electromagnetic interaction for inspection.

2) Nuclear force is changed by a strong electromagnetic interaction.

When supposition of the main subject is right, nuclear force can be obstructed by an electromagnetic interaction.Some this is realistic, and it's possible to be to give a strong electromagnetic interaction to the radioelement and change a half-life.I can think a half-life changes equally because gravity is weak at space.

4. Conclusion

1) Time is defined by a time check using a photon by present-day physics, but this isn't enough as a definition.

2) When it's possible to define time as "the number of the boson by which an action is possible", the definition called time up to now can be defined as photon time.This isn't inconsistent with relativism.

3) The one the one with late time is calling time by gravity can explain because it's photon time actually.

4) When it's possible to define time as "the number of the boson by which an action is possible", a retrogression possibility of time becomes extinct inevitably.

5) When considering boson time, the life expectancy of the neutron can be explained clearly.