

Now I start the fourth part. This is the last part.

In this fourth part, I explain that the idea of the new grammar for the quantum mechanics  
shown in the second part  
is not restricted to the quantum mechanics  
but applicable to general quantum theories.

For that purpose,  
I explain how the new grammar  
to be replaced with the existing grammar  
of the quantum field theory for a real scalar field  
is  
when we apply the idea of the new grammar shown in the second part.

The trial production of the new grammar and the new equation for a real scalar field  
can be accomplished in quite the same way  
as one for the system  
with one degree of freedom described before.

In this case, especially,  
it is the plausibility of the new grammar  
that the domain of definition of a coordinate of a history is  $\{ \phi : \mathbb{R}^4 \rightarrow \mathbb{R} \}$   
from the relativistic standpoint.  
It is also plausible that  $\int d^4 x$  and  $\delta / \delta \phi(x)$  in the equation are four-dimensions-like.  
In contrast with this, the Hamiltonian is represented using  $\int d^3 x$ .  
 $\phi(\square, \square, \square, \square - \epsilon)$  is a mapping from  $\mathbb{R}^4$  to  $\mathbb{R}$   
and is defined by  $[\phi(\square, \square, \square, \square - \epsilon)](x, y, z, t) = \phi(x, y, z, t - \epsilon)$ .

By expanding  $\Phi$  into a power series,  
it follows that a coordinate  $\Phi$  of a history by the new grammar  
is equivalent to a mapping  
from  $\{0\} \cup \mathbb{R}^4 \cup \mathbb{R}^4 \times \mathbb{R}^4 \cup \mathbb{R}^4 \times \mathbb{R}^4 \times \mathbb{R}^4 \cup \dots$   
to  $\mathbb{C}$ .

Therefore we can think that a quantum history in terms of the new grammar  
is a classical field on the spacetime  
the set of whose coordinates is  
 $\{0\} \cup \mathbb{R}^4 \cup \mathbb{R}^4 \times \mathbb{R}^4 \cup \mathbb{R}^4 \times \mathbb{R}^4 \times \mathbb{R}^4 \cup \dots$ .

I named the spacetime in this meaning the power series spacetime.  
We can expect that it is possible to make the quantum theory of the gravitational field  
by imitating the way of construction of the classical general relativity  
by introducing some structure  
such as the phase in the power series spacetime.

To take the existence of Fermi field into account,  
we have only to use the Grassmann variable technique.

So much for the fourth part of my presentation.

Please let me add a few more comments.

I know that all scholars who have much influence on the tide of the physics in the world  
always must make influence of what they heard  
on the tide of the physics in the world  
when they have heard some important thing.

I also know that all persons who can contact such scholars  
must let such scholars know what they heard  
when they should do so.

What the persons who have heard my presentation should do  
depend only on how important they feel my presentation,  
and there is no room for their free will.

There are people who say that my new grammar is not worth regarding  
because it is not necessary.

However,  
neither the Dirac's monopole hypothesis nor the Einstein's unification conception  
is necessary

and these were esteemed since before they yielded significant results.

In the science, any proposal must not be evaluated by who stated it  
but be evaluated by its content.

Please feel honestly how the content of my presentation is.

Thank you for listening to me.

Please do not hesitate to contact me during the breaks between the sessions.