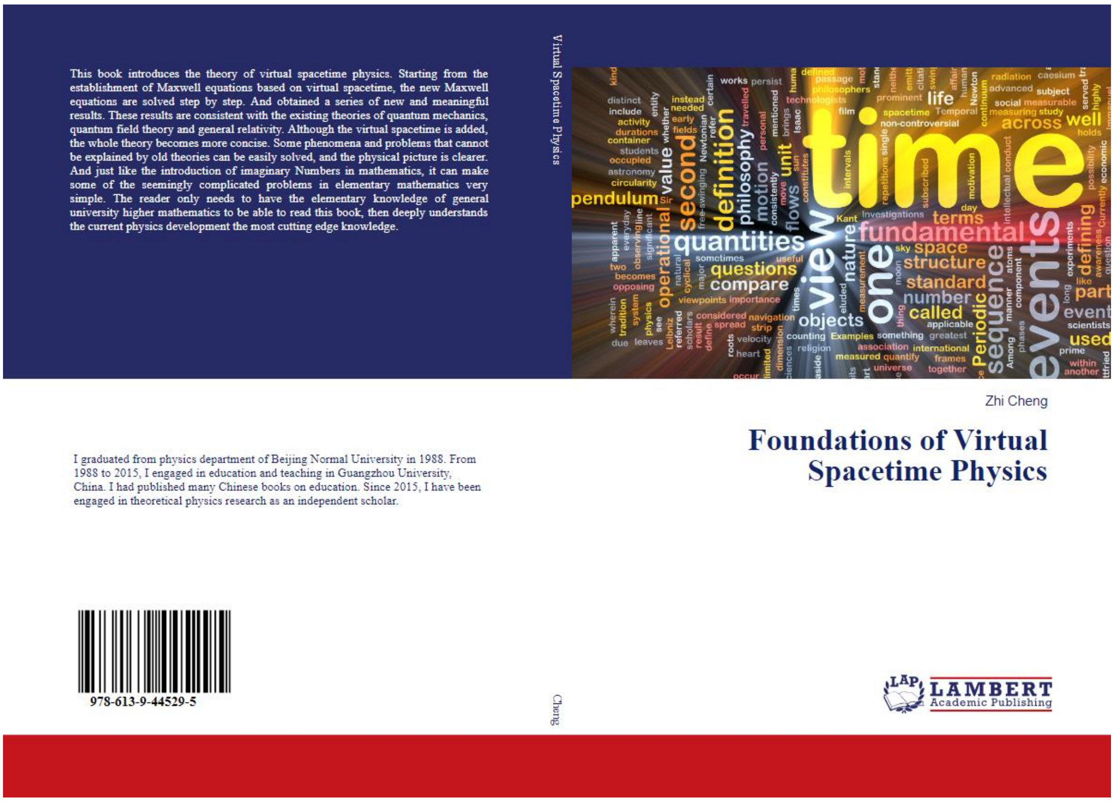
Foundations of Virtual Spacetime Physics



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Preface

The 1920s and 1930s were an era of rapid development in physics. During this period of time, both physical theory and experimentation have achieved a series of important results. Including the creation of important theories such as relativistic mechanics and quantum mechanics; it also includes the acquisition of a series of modern physics experimental data. However, after the 1950s, the development of physics theory seems to have entered a period of relatively slow development, especially the development of theoretical physics. For more than 50 years, it has basically remained the theories established 50 years ago.

However, the development of new disciplines such as computer science and biomedicine is changing with each passing day. The current computer speed has far exceeded the calculations of fifty years ago. A small mobile phone has more computing power than a hyper computer held fifty years ago. The same is true of the development of biomedical science and technology. Fifty years ago, we were still struggling with the function of genetic material, and now we have been able to modify the genes precisely. This makes genetic technology a popular technology that is becoming more and more popular.

Compared with these rapidly evolving emerging disciplines, the theory of physics seems to be moving in the other direction. This is why theories are becoming more and more complex, and the mathematical tools used are becoming more and more difficult. For example, Professor Tsung-Dao Lee, a Nobel laureate, once pointed out that an undergraduate student can do very important work in the 1920s and 1930s. However, an undergraduate student in physics can only master the most basic physics theory today. To make meaningful work, a today's student needs to be able to do research work for a few years after the postdoc.

Generally speaking, a student has a Ph.D. in physics and is in his thirties. After a few years of post-doctoral studies, he is nearly forty. People go to middle age.

To cite this example is not to deny the current physics education work, but to explain that the complexity of the current physics theory requires a person's most important stage of life to learn. At such a big price, the final result is only to understand what these physical theories are all about. Really able to have their own ideas, when they work independently, they are about to enter the old age. Does this reflect that at least the mathematical tools used in these theories are not well suited for human learning and understanding?

I think there are two ways to solve the problem. One is to continue to maintain the existing physical theory framework, introduce advanced computer technology, and hand over the tedious calculations to the computer for processing. At present, computational physics has been developed and applied to some extent in some fields. However, in some unknown areas, such as the structure of particles, the laws of the micro-scale in a very small scale, etc., more human creative work is needed.

Another way is to come up with new theories. Describe the physical world in a simpler mathematical language. There are many people doing this work, and the progress made is not optimistic. After all, this involves many other factors. The virtual spacetime physics proposed in this book is such an attempt. The author is confident that such work can help us understand the macro and micro worlds. The reason is that the physics we built in the past is just a way to describe the laws of nature. Just as there are thousands of languages in the world, different languages are designed to satisfy the simple purpose of communication between people. There are many different physics theories, and different theories are just to help us understand the laws of nature. Therefore, the specific theory used to describe these natural laws is only a formal problem. This theory is valuable as long as the results of the theoretical analysis are consistent with the experimental facts.

Based on such considerations, the content of this book uses the content of university advanced mathematics as much as possible to describe the physical laws. Nevertheless, in order to be consistent with the existing modern physics theory, and to play a role in the past and the future, some mathematical equations of general relativity or quantum field theory will be involved in some places. However, I believe this will not affect the readability of this book.

The book's name is the "Foundations of Virtual Spacetime Physics". As the name implies, it is assumed that there is a virtual spacetime in addition to the real spacetime of our lives. Although this virtual spacetime cannot be directly felt, it will indirectly affect the various physical laws of real spacetime. Just like in a complex function, imaginary numbers have the same effect on real numbers.

After adding the factor of virtual spacetime in theory, we can have a simpler and more intuitive understanding of some phenomena in real spacetime. For example, understanding the mass, The Standard Model needs to introduce a Higgs mechanism. The virtual spacetime physics simply thinks that mass is the performance of virtual spacetime energy in real spacetime. When discussing the nature of neutrinos, existing physics cannot explain why neutrinos have a rest mass. The virtual spacetime physics gives a new neutrino model, indicating that the neutrino is composed of two spacetime electromagnetic waves. This can meet the requirements of neutrino's speed of motion and the requirement of neutrinos with rest mass. For the reason why the charge is quantized, Dirac solves this problem by introducing a magnetic monopole. However, more than half a century has passed, and people have found nothing on the road to finding magnetic monopoles. Virtual spacetime physics believes that magnetic monopoles exist, but magnetic monopoles exist in virtual spacetime, so they cannot be detected in real spacetime. This has also become important evidence supporting the existence of virtual spacetime.

It has been more than six years since the initial presentation of Maxwell's equations based on virtual spacetime to the official publication of the Foundations of Virtual Spacetime Physics. Although more and more evidence emerge that can be used to support the theory of virtual spacetime physics, it is still less mature than those that have undergone nearly a hundred years of history. So how to arrange the content of this book is a rather tangled problem. Just in November last year, Ms. Natalia Sinitin, editor of Lambert Academic Publishing, contacted me to see if I had any relevant articles published in them. This also led me to sort out the past research materials on physics of virtual spacetime and classify them into books. The framework and content of the current the "Foundations of Virtual Spacetime Physics" was finally formed.

My idea is this. The first chapter emphasizes the process of the recognition of negative and imaginary numbers in human history and its extensive application. It shows that the existence of virtual spacetime also has a process of ambiguity to clear understanding, and will eventually be widely used.

The second chapter goes directly to the topic and transforms the existing Maxwell equations to obtain Maxwell's equations based on virtual spacetime. The new Maxwell equations have also become the most basic equations in virtual spacetime physics that are similar to those contained in Newton's laws of motion. Solving the Maxwell's equations based on the virtual spacetime can obtain very meaningful results such as the virtual photon wave function solution and the neutrino wave function solution.

The third chapter begins to explore an important solution based on the virtual spacetime Maxwell's equations, the virtual photon wave function solution. In this chapter, some important properties of virtual photons are discussed and compared with the wave functions in quantum mechanics, and a new interpretation of wave functions is obtained. At the same time, this chapter also attempts to simplify some of the more complex atomic energy levels calculation using the virtual photon model.

The fourth chapter explores the structure of elementary particles. Since the micro-world of a very small scale will directly involve the problem of virtual spacetime, it is possible to use the knowledge of virtual spacetime physics to explain various microscopic laws. The structure of the elementary particles given in this chapter will be more intuitive and easier to understand. Some theoretically estimated data are also basically consistent with experimental data.

The fifth chapter explores the origin of gravity. Since virtual spacetime physics has its own theory of the origin of mass, the knowledge of gravitation caused by the existence of mass can naturally be obtained by virtual spacetime physics. The calculation results in this chapter also show that the black hole in general relativity may be the virtual spacetime in this book. On the whole, the connection between the theory of virtual spacetime physics and the theory of general relativity is still very close. Whether the two theories can be unified in the future remains to be studied in depth.

The sixth chapter explores the neutrino model. In view of the current small amount of experimental data on neutrinos, the content of this chapter has a certain subjective view. But I believe this will at least provide a direction for our current neutrino exploration and research. If there are more experimental data in the future, we can make various amendments to the theory, which will help us deepen our understanding of neutrinos.

With only six chapters of the content, it seems a bit thin. This is mainly due to the short time and the relatively small amount of relevant information. In addition, I also feel that although the theory has been simplified as much as possible, after all, it involves more professional issues, and there are not many readers interested in this topic. If you do a lot of work and you find out very few people to read, then the price/performance ratio is weaker. So, I have written these six chapters in a hurry and become a booklet, perhaps to explain to some interested readers. Of course, the work done in a short period of time is bound to be a lot of mistakes. If readers find out, I hope to forgive, and please do not hesitate to correct me.

Zhi Cheng

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Content

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