康音著

物理学的新视角—
从集体效应到两极相约

TIEDOR MECHANICS

胁量力学

吉林科学技术出版社

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排　　版：郭守娟
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内容简介

本书展示了一种全新的力学论证思路和概念逻辑体系。目的是：想从更合理的物理视角和更便捷的数理形式出发，达到解析和诠释现有理论知识（如量子场论和现代宇宙学等）未及解析或难予诠释的物理现象和背景规律的目的（比如破解若干著名的物理之谜）。途径是：通过引进介于标量和矢量之间的第三种动力学表征量，完成广义集体效应的量化描述，据之导出宇宙极大与极小物理参数之间的相干机制，随即深入到宇观物理和微观物理的广泛讨论之中，检验整个理论逻辑的自洽。最后给出实证设想和应用预测，以及概念拓展的进一步考虑。

内容虽具专业特点，但不乏趣味性，不乏为动脑爱好者提供的看点。读者对象，可由普通科技工作者、大学教师、研究生、大学生扩大到所有热爱物理学、关心物理学未来前景的青年人和曾经年轻过的女士们和先生们。

A New Visual Angle in Physies

—From the Bloceffect to the Appointment between Two Extremities

TIEDOR MECHANICS

KANG YIN

Jilin Science and Technology Publishing House

A new system of mechanics is introduced which may be called the Tiedor Mechanics. The term "tiedor" is coined to denote a quantitative state that is tied or restricted. This book is intended to find a way, in a reasonable physical angle of view and in a more convenient form of mathematics – physics, to analyze and explain these physical phenomena and their background laws (e. g. , solve some famous pazzles in the physical world) which can not be analyzed and explained by the existing theories and knowledge (such as, the Quantum Field Theory and Modern Cosmology etc.). The way is that, by introducing the third fundamental variable differing from the existing both of the scalar and the vector (consisting of the tensor), we can make a quantitative description of the Bloceffect (a collective effect), whereby, we can derive a correlative mechanism between two parameters of the extremly large and the extremly small in the universe and go further with the comprehensive discussion of the microscopic and cosmosscopic physics. During all the discussion, the self – consistency of the new theory will have been getting some strict examinations. Finally, we shall give some suggestions of the verification and some envisions of its application and development in future.

Although it is professional, it is also full of interest and attractive to the people who enjoy intelligent thinking. This book is suitable for college students, graduate students, teachers, professional scholars and all the youth who love physics and pay more attention to the future development of the physics; including all, of course, the ladies and gentlemen who have ever been young.

致 读 者

谢谢对本领域的惠顾。为了便于了解书中都说些什么，您须稍有一些知识准备，比如应有少量的新旧量子论、相对论、天体物理和现代宇宙学知识。数学已经作了尽可能的简化，而且某些地方还可以放过推导，直接看结论。

在全文的推理过程中，我们发现不得不给一些必须引进的新概念编设术语和英文拼写，比如：宇观 Cosmoscopy，集体效应 Bloceffect，胁量（胁量子）Tiedor，反胁量（反胁量子）Antitiedor，物界 Matter-boundary，视界 Horizon，空间两重性 Space－duality，层次热力学 Hierarchic Thermodynamics，观角 Survangle，思角 Thoughtangle，层次协同 Coordination of hierarchies 等。

另外，借此申明：本书以前的见刊论文中，如有术语提法方面与本书不一致处，一律以本书为准，并建议读者留意此类差异。

胁量力学是直接从狭义、广义相对论思想根基上生长出来的力学理论，同时汲取了量子理论的全部基本思想成果，现在已经初步形成为，从原始假设到核心推理，再到解释和描述从宇观物理至微观物理的广延的物理机制和物理现象的、有统一内秉逻辑和严谨数理关系的、一整套全新概念的自洽体系。内容是多了点，但基本要素只有三个：普遍性机理是“集体效应”；阐述语言是“胁量”；核心规律和核心方程的建立是“两极相约”。读者只要抓住这简单的三点要素，并稍稍用点心，肯定不通自通。

有一点值得提及，胁量力学思想很可能要使自然辨证法从原来三定律，扩充为四定律，使辨证法的整体逻辑结构臻于完美。它们是：对立统一体、协同层次群、量变到质变、否定之否定。

当您阅读狭义相对论和广义相对论原著以及 Einstein 本人这方面的原汁原味的推理和阐释时，你一定会为那里面的连贯的、丝丝入扣的深邃思考和精准逻辑所折服。如果你能够再进一步地有所留意，你还将为不止一处的极富创意和远见的“预示点”所震惊。后来人，编写了许多相关的“导论”和教材读物，却从未达到上述效果。原因很多，其中决定性的一条是，这些转述者均不同程度地忽视了一些他们各自未能理解但却十分重要的思维点，特别是，他们删减了一些为他们迷惘不解或被他们视为赘述的思路拐点。然而，正是这些宝贵的由思想折皱和矛盾凝聚所构成的方向待定点，预示着并开启了狭义、广义相对论的未来通道。

因此，我建议读者在翻阅这本拙作之前，一定要精读一下普林斯顿科学文库（Princeton Science Library）中的首篇文献《相对论的意义（The Meaning of Relativity）》。目前有新版中文译本，编排译校均属上乘。然后再顺便翻一翻 Hawking 的“时间简史”。

通常，就是由于传达中的遗漏和传达人的个人认识偏颇带进来的内容晦涩朦胧和形式繁琐诡秘，影响到一项人类智识的普及和发扬。大自然机理原本既不晦涩也不诡秘，描述它的方式当然不仅不能晦涩和诡秘，更须极尽明朗、通透和简洁。此点正是 Poincaré、Einstein、Dirac、Gamow、陈省身、赵忠尧等科学巨匠们的终生倡导和身体力行。本书著者力求效仿前师，竭尽采用最便捷、最直观的数学语言，企将一个明晰的沿着相对论思想轨道推进的新的论证系统奉献到读者足前，惟惶恐于水平之限，未能达到心诒的预期和友人们的厚盼。

著者

2003 年 12 月

To Readers

Thank you for your kindness to read this book and give your attention to the new field of science. You will easily understand what is said in this book, if you are supposed to have some knowledge in preserve such as of the guantum theorry, the new and old theory of relativity, the astrophysics and the modern cosmology. Mathematics is used in this book as in simpler form as possibly and some formula even is past over in somewhere straight into deduction.

In the logical reason, we have to intoduce some new concepts and coin some terms to specify them, such as cosmoscopy, bloceffeet, tiedor, antitiedor, matter boundary, horizon, space – duality, hierarchic thermodynamics, survangle (the angle of survey), thought angle, coordination of hierarchies and so on.

The Tiedor Mechanics is a new field of mechanics which has grown out of the specific and general theory of Relativity and derived the basic ideas from the quantum theory. It has now become a self – consistent system of new concepts that is developed from a primitive hypothesis to a core reason with an internal logic and rigorous mathematical and physical relation in explanation of the extensive phenornena and their mechanism in the cormoscopic and microscopic physics.

Although much is said in the book, there are only three essential elements: Bloceffect, a universal mechanism; Tiedor, a term used for its description; the Appointment between two extremities, a kernal law and equation. These main points are grasped and it is easy to understand what is stated in the book.

It is worthy to be mentioned that the Tiedor Mechanics is supposed to make the logic structure perfected by increasing three original laws of dielectics into four: the unity of

opposites; the group of coordinate hierarchies (the one added); the quantitative change to the qualititative change; the negation of negation.

When you read the original works of the theory of Relativity and the explanation by Einstein himself, you must be convinced with admiration by his thinking in a profound and imaginative way and his expression in a coherent and correct logic. If you read further more carefully, you will find with shock there are more than one prophecy with foresight and creativity. But the works later intended to contribute to best understanding Einstein ś theory are far from the expected result. There are many reasons one of which, the important one, I think, is that some restatements maybe omitted something that was thought of as superflwous words or could be not understood at that time but that could be important just as a turning point of thinking which consists of folded thought and cumulatie contradictions and may become a possible starting point of development in future of the theory of Relativity.

In order to deepen his comprehension of what is stated in this book, I suggest, the reader must read the relevant material, such as " The Meaning of Relativity " (Princeton Science Library), " A Brief History of Time" (Hawking), and so on.

It is usually the omission or obscurity in a restatement resulted from the author ś partial cognition that would present an obstacle to the popularization and development of the human knowledge. The mechanism in nature is neither obscure nor mysterious by its nature and it must be described in a simple and clear expression. Such is the way that is initiated and put into practice by the great masters of science, Poincar ? Einstein, Dirac, Gamow, Zhao Zhongyao, Chen Xingshen and the like.

The author of this book is trying to follow the example to make the progress along the way of the theory of Relativity and now presents a new system of argument in a convenient and intuitive mathematical language. The author is afraid that the book would not attain the expected effect and the hope of friends because of the limited knowledge.

The author

Des. 2003

全书思想纲要

我们的宇宙，它的物质构成是统一的，它的全部物理规律是统一的，它的各个尺度上的现象是相互协调而存在的。这给我们提供了一个机会，使我们不必局限于一个尺度上说一个尺度的事，比如不必仅就粒子和场来研讨微观的粒子和场现象，而是可以跨尺度说事，比如从宇宙全局上建立合理模型，再回头看这个模型在微观粒子和场身上有何响应，即看宇观尺度的物理机制给微观尺度的物理机制带来些什么特别约定，引出一些什么我们以往尚不知情的决定性因素，以及是否产生一些基本概念上的必要修正和补充。反过来，若能首先确准一个微观方面的参数，也可直接推测它对宇观物态的限定。再比如，若能找到一个衔接宇微两极的中间桥梁，我们便能够从一开始就进行两极相约的物理机制探讨。

真空地位之所以特殊，正是在于它是惟一跨尺度存在和起作用的事物，在于它很可能身为我们宇宙的潜在主角。本书通过对它的大胆定义或假设，率先展开宇宙运动形态和动力的解析，随之映射到基本粒子和基本相互作用的推理上来。依据“观角”和“思角”优势，本书发现了一系列为量子场论和其他物理理论所无法发现的潜在关系和潜在规律。比如，它给出了负能量、负质量的新的规范定义，于论述推理中发现了一系列新的物理关联常数，尤其是它揭示了电子和其他基本粒子的稳定性之谜、基本粒子的尺寸临界性之谜、狄拉克大数之谜、强力的形成与结构之谜、弱力的形成与结构之谜、重力的空间弯曲效应或几何解释的来由之谜、电磁辐射速度的常数性质之谜（光速常数的机制由来）、四力超统一之谜、宇宙膨胀动力之谜、大爆炸起因之谜、正质量物质的生灭过程之谜、微波背景辐射的真正来

源之谜、宇宙的绝对孤立性质之谜、物界的动态“宇宙”之谜、混沌理论的层次热力学意义之谜、“人择原理”中的积极意义部分的替代理论是否存在之谜……

上述整个的数理论证形式和整个的概念自洽体系实际上已经构成为一种新型的基础力学。所以，我们将之命名为“胁量力学”Tiedor Mechanics。这个力学将十分有利于协调相对论和量子论双方的核心思想，找到两者共同的物理出发点。

The Brief Idea

The physical constitution in universe is uniform, and such are the laws in it. Meanwhile, we could find that its phenomena in every scale are restricted by one another. So an opportunity is offered to us, which prevents us from discussing something limited by scale. For the first example, we could discuss microcosmic particle and field phenomenon in different scales. For the second instance, we can also set a reasonable model based on the whole universe scale and check how the model affect the microcosmic particles and the field, i. e., to find out what will be the special restrictions, which the cosmosscopic physical mechanism can bring to the microcosmic physical mechanism; and lead to the crucial factors which we have never known before; and make sure whether it will offer some necessary complement and amendments on some basic concepts. On the contrary , if a microscopy parameter can be defined in advance, its restricting on the cosmosscopy state will be directly made out. Additional example, if a bridge is found between two extremities, we shall explore the mechanism of the Appointment between two extremities from the start.

The special status of vacuum lies in the following two points: the first, it is the sole object that can exist and work spanning over different scales; the

second, it might be the potential protagonist in our universe. By audacious definition or hypothesis, we herein firstly conduct the solution of the universe movement and its dynamic, and then applies it tothe reasoning of elementary particles and basic reactions. Depending on the advantage of " the Survangle" and " the Thoughtangle", we discover a series of latent relations and laws, which are beyond the ability of quantum field theory or other physical theories. For instance, it offers the new normative of negative energy and negative mass, and also find a series of new physical related constants by analyzing and reasoning. Especially, it solves the following mysteries, i. e., the mystery of the stability between electron and other elementary particles; the mystery of the critical scale of elementary particles; the mystery of Dirac big number puzzle; the mystery of the formation and structure of strong force; the mystery of the formation and structure of weak force; the mystery of the bending effect of space by gravity or the origin of geometric explain; the mystery of the constant character of electromagnetic radiation speed (the origin of velocity constant); the mystery of super - unity of four basic forces; the mystery of the momentum of universe expand; the mystery of the origin of the big bang; the mystery of the generating and annihilating process of positive quality; the mystery of the real origin of the microwave background radiation; the mystery of the absolute insulation of the universe; the mystery of the motive " universe" in the " Matterboundary" , the mystery of the meaning of the Hierarchy Thermodynamics in chaos theory; the mystery of whether there is the substitute theory of the positive meaning inside of " the person selected principle"

The form of the above mathematics physics theory and whole self - consistent system have constitute a new type of basic mechanics, which is named as " Tiedor Mechanics". Such mechanics will benefit to the harmony of the core idea between the theory of relativity and the quantum theory, and find out their common physical start as well.

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第四章 胁量机制下的四力超统一表达

第五章 重力模型与真空动力

导 引

一、初始视角与约束 Hamilton 系统的潜在序性

我们注意到，动力学系统的位行空间 Lagrange 量体系以及相空间的 Hamilton 量体系的描述，同热力学系统的概率分析体系描述之间的区别，实际上可归结为，或说可统一在对称性差异或者序性差异上面。本文还注意到，从物理学的经典理论到量子理论的过渡，实际上是从连续对称的解析发展到分立对称的解析，从整体对称的解析深入到定域对称的解析，正是定域不变性对应着微观粒子的各种基本相互作用关系，决定了量子场的可重整化，给出了微观机制解析的切入点。

对称性的另一种阐述语言就是序性。就是说，约束 Hamilton 系统存在着潜在的序性机理。序性概念通常被称作直观的概念，但它也可以被视为抽象概念。如果我们作这样一个特别处理，将系统的整体约束或定域约束平均分配给每一个组成系统的子系身上，形成动力学系统中的运动粒子身上的一种“抽象”的物理变量时，我们就会因这一特别处理，而有了用另一种新的数理形式来解释动力学系统的某种性质的可能。这种所谓“抽象”的方式，就是动力学系统的系统集体相互作用于系统中每个粒子（子系）身上的投影。集中注意于这种投影的分析有可能开启一扇新的机制认识和定义的视窗。

可以预感到，这种所谓“抽象”的力学解析，将使我们有可能绕过量子场论的现有体系的“规范场收敛”，“再由规范场到重整化群的收敛”等的重复推理，直接触摸到微观粒子的物理关系上来。其实这里的所谓“抽象”，本来产生于我们的概念定义顺序，或说产生于理论认识次序上的先后关系。如果将动力学系统粒子集体相互作