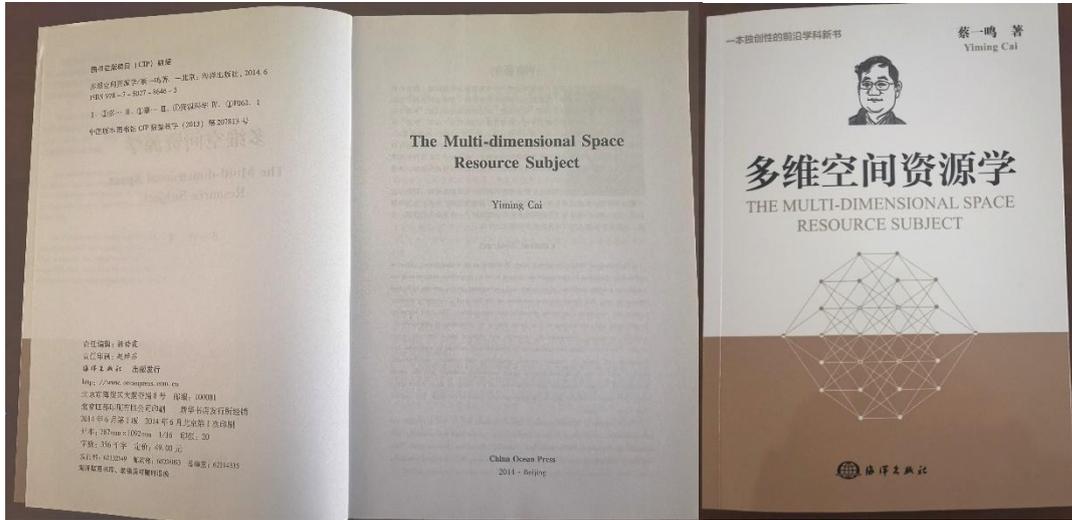


本书新提出的定义和名词解释

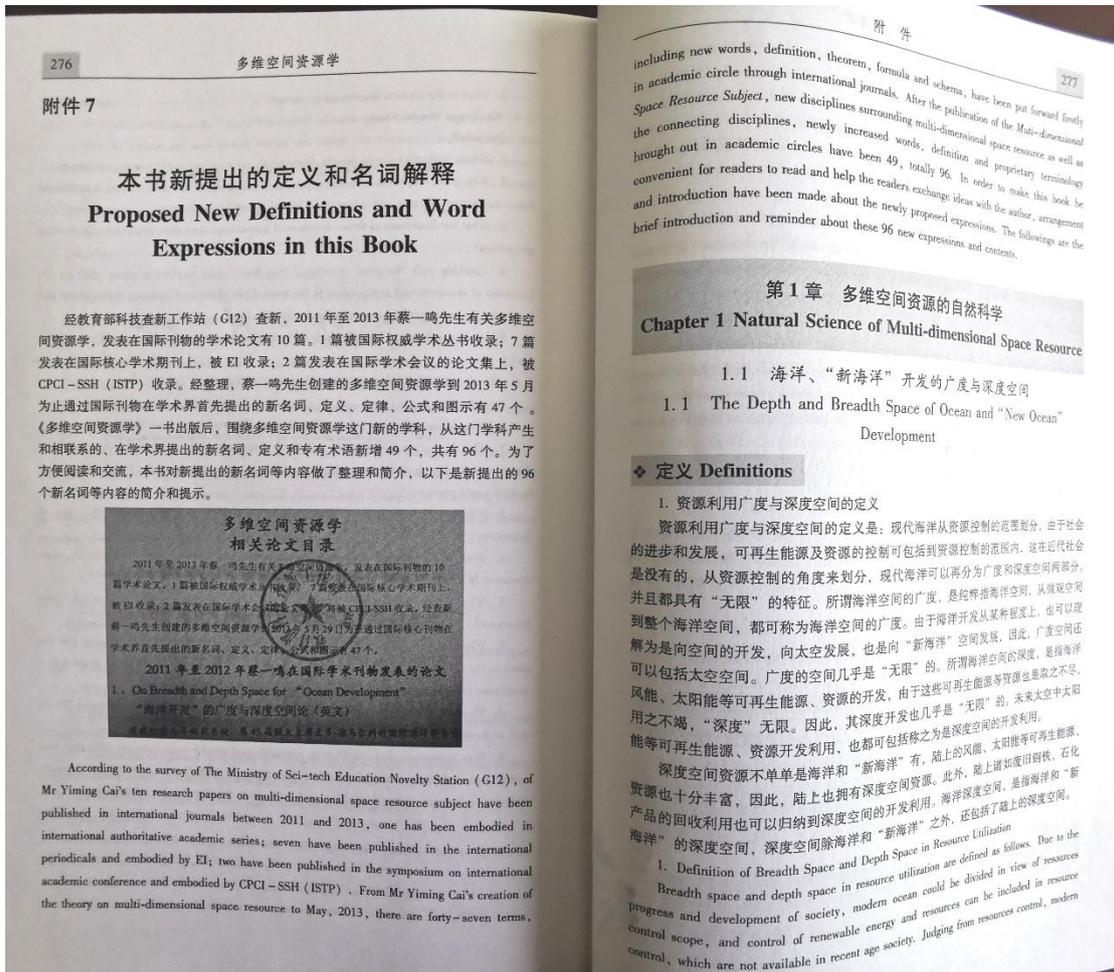
蔡一鸣



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附件 7

本书新提出的定义和名词解释

Proposed New Definitions and Word Expressions in this Book

经教育部科技查新工作站 (G12) 查新, 2011 年至 2013 年蔡一鸣先生有关多维空间资源学, 发表在国际刊物的学术论文有 10 篇。1 篇被国际权威学术丛书收录; 7 篇发表在国际核心期刊上, 被 EI 收录; 2 篇发表在国际学术会议的论文集上, 被 CPCI-SSH (ISTP) 收录。经整理, 蔡一鸣先生创建的多维空间资源学到 2013 年 5 月为止通过国际刊物在学术界首先提出的新名词、定义、定律、公式和图示有 47 个。《多维空间资源学》一书出版后, 围绕多维空间资源学这门新的学科, 从这门学科产生和相联系的、在学术界提出的新名词、定义和专有术语新增 49 个, 共有 96 个。为了方便阅读和交流, 本书对新提出的新名词等内容做了整理和简介, 以下是新提出的 96 个新名词等内容的简介和提示。

**多维空间资源学
相关论文目录**

2011 年至 2013 年蔡一鸣先生有关多维空间资源学, 发表在国际刊物的 10 篇学术论文, 1 篇被国际权威学术丛书收录, 7 篇发表在国际核心期刊上, 被 EI 收录; 2 篇发表在国际学术会议的论文集上, 被 CPCI-SSH (ISTP) 收录。经整理, 蔡一鸣先生创建的多维空间资源学到 2013 年 5 月为止通过国际刊物在学术界首先提出的新名词、定义、定律、公式和图示有 47 个。

2011 年至 2012 年蔡一鸣在国际学术刊物发表的论文

1. On Breadth and Depth Space for "Ocean Development"
“海洋开发”的广度与深度空间论 (英文)

According to the survey of The Ministry of Sci-tech Education Novelty Station (G12), of Mr Yiming Cai's ten research papers on multi-dimensional space resource subject have been published in international journals between 2011 and 2013, one has been embodied in international authoritative academic series; seven have been published in the international periodicals and embodied by EI; two have been published in the symposium on international academic conference and embodied by CPCI-SSH (ISTP). From Mr Yiming Cai's creation of the theory on multi-dimensional space resource to May, 2013, there are forty-seven terms,

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including new words, definition, theorem, formula and schema, have been put forward firstly in academic circle through international journals. After the publication of the *Multi-dimensional Space Resource Subject*, new disciplines surrounding multi-dimensional space resource as well as the connecting disciplines, newly increased words, definition and proprietary terminology brought out in academic circles have been 49, totally 96. In order to make this book be convenient for readers to read and help the readers exchange ideas with the author, arrangement and introduction have been made about the newly proposed expressions. The followings are the brief introduction and reminder about these 96 new expressions and contents.

第 1 章 多维空间资源的自然科学

Chapter 1 Natural Science of Multi-dimensional Space Resource

1.1 海洋、“新海洋”开发的广度与深度空间

1.1 The Depth and Breadth Space of Ocean and "New Ocean" Development

◆ 定义 Definitions

1. 资源利用广度与深度空间的定义

资源利用广度与深度空间的定义是: 现代海洋从资源控制的范围划分, 由于社会的进步和发展, 可再生能源及资源的控制可包括到资源控制的范围内, 这在近代社会是没有的, 从资源控制的角度来划分, 现代海洋可以再分为广度和深度空间两部分, 并且都具有“无限”的特征。所谓海洋空间的广度, 是纯粹指海洋空间, 从横观空间到整个海洋空间, 都可称为海洋空间的广度。由于海洋开发从某种程度上, 也可以理解为是向空间的开发, 向太空发展, 也是向“新海洋”空间发展。因此, 广度空间还可以包括太空空间。广度的空间几乎是“无限”的。所谓海洋空间的深度, 是指海洋等可再生能源、资源开发, 由于这些可再生能源等资源也是取之不尽、用之不竭, “深度”无限。因此, 其深度开发也几乎是“无限”的。未来太空中太阳能等可再生能源、资源开发利用, 也都可包括称之为是深度空间的开发利用。

深度空间资源不单单是海洋和“新海洋”有, 陆上的风能、太阳能等可再生能源、资源也十分丰富, 因此, 陆上也拥有深度空间资源。此外, 陆上诸如废旧钢铁、石化产品的回收利用也可以归纳到深度空间的开发利用。海洋深度空间, 是指海洋和“新海洋”的深度空间, 深度空间除海洋和“新海洋”之外, 还包括了陆上的深度空间。

1. Definition of Breadth Space and Depth Space in Resource Utilization

Breadth space and depth space in resource utilization are defined as follows. Due to the progress and development of society, modern ocean could be divided in view of resources control scope, and control of renewable energy and resources can be included in resource control, which are not available in recent age society. Judging from resources control, modern

ocean can be further divided into breadth space and depth space, both of which have characteristic of "being unlimited". The so-called breadth of ocean space, purely refers to the ocean space. From microscopic space to the entire ocean space, all can be called as the breadth of ocean space. To some extent, ocean development can be understood as development toward space and outer space. It is also the development of "new ocean" space, therefore, breadth space also include the outer space. Breadth space is almost "unlimited". The so-called depth of ocean space, refers to development of ocean wind energy, solar energy and other renewable energy and other resources. Since these renewable energies and resources are inexhaustible, then "depth" is unlimited. Therefore, depth development is almost "unlimited". Development and utilization of solar energy and other renewable resources in outer space in the future can be included in exploration of depth space.

Depth space resources do not only exist in ocean and "new ocean", wind energy, solar energy and other renewable resources on land are also very rich. Therefore, land also has depth space resources. In addition, recycling and re-use of scrap iron and steel, petrochemical products can also be regarded as exploration of depth space. Ocean depth space means the depth space of ocean and "new ocean", while depth space also included the depth space on land, in addition to that of ocean and "new ocean".

◆ 名词解释和名词 Term Definitions

1. 海洋的广度空间
海洋空间的广度,是纯粹指海洋空间,从微观空间到整个海洋空间,都可称为海洋空间的广度。广度是取其“横向”延伸的意义,这里的广度是单纯指海洋微观空间到整个海洋空间“横向”的广度空间。也可以这样理解,海洋的广度空间是“平面的”、“一条线”上的延伸。

1. Breadth Space of Ocean
The breadth space of ocean merely refers to the ocean space. From microscopic space to the entire ocean space all can be called the breadth of ocean space. Breadth is used in its "horizontal" extension which here simply means that the breadth of space between microscopic space and the entire ocean space. It also can be understood like that the breadth of ocean space is "planimetric", extending on "a line".

2. "新海洋"——太空
走向海洋是走向更广阔的发展空间,走向太空也是走向更广阔的发展空间,从这一意义上解释,太空是"新海洋"空间的延伸。

2. "New Ocean" — Outer Space
Marching toward ocean is toward wider development space and it is the same with marching toward outer space. Taken in this sense, the outer space is the extension of "new ocean" space.

3. 海洋的深度空间
深度是取其“纵向”发掘的意义,在海洋空间的广度上,能够被不断挖掘“深度”的可再生、可循环能源等资源可称为是海洋可控制权益的深度空间,或者是海洋“复制”挖掘深度的空间。

3. Depth Space of Ocean
Depth is used in its "vertical" exploration. On the breadth of the ocean space, the renewable and recyclable energy and other resources, which can be continuously explored, can be called the depth space of ocean's controlling interests, or developing energy and other resources of ocean and "new ocean" can be continuously extended in "longitudinal direction", "points" and can "copy" digging depth space.

4. "新海洋"太空的深度空间
4. Depth Space of "New Ocean" — Outer Space
5. 广度空间与深度空间的区别和特征
5. Differences and Characteristics of Breadth Space and Depth Space
6. 和谐海洋环境的新解释
6. New Definition of Harmonious Ocean Environment

◆ 图表示意 Diagram

1. 海洋、“新海洋”广度及深度空间关系示意图 (图 1.1.1)
1. The Diagram of Spatial Relationships between Breadth and Depth Space of Ocean and "New Ocean" (Figure 1.1.1)

1.2 深度空间资源的物质形态及性质
1.2 Material Form and Nature of Depth Space Resources

◆ 名词解释 Term Definitions

1. 深度空间能源等资源的物质形态及性质
一个点的不断利用和做功是深度空间资源利用物质形态的最基本性质之一,在一个点上利用自然生态“路过”的能量完成做功。这一性质决定了深度空间资源利用的自然属性,保持了自然界物质运动的平衡。

风能、潮汐、海浪、海流、宇宙射线等自然“力”点的能量交换均属于深度空间资源。
深度空间植物类点的利用,则通过植物能源等资源对化学物质的吸收和排放,保持了自然界物质运动的平衡。而可再生资源点与点的循环则是通过回收和利用保持了自然界物质运动的平衡。

1. Material Form and Nature of Depth Space Energy and Other Resources
Constantly using and working at one point is one of the basic natures of material form utilization by depth space resources. Generally, through "passing by" that point, depth space resource utilization but also keeps the balance of matter motion in natural world.

Energy exchange among points of wind energy, tidal energy, ocean waves, ocean currents, cosmic rays and other natural "power" belongs to depth space resources.
Through absorption and emission of chemical substances by plant energy and other resources, the utilization at one point of depth space plants maintains the balance of motion of matter in natural world. The circulation from point to point of renewable resources achieves such balance by recovery and utilization.

2. 深度空间资源最基本特征
人类利用能源等资源一个点的不断利用和做功是深度空间资源的最基本特征。深度空间仅是点的能量交换,不发生与广度空间其他物质横向的、广泛的化学反应。除太阳能、风能之外,潮汐能、海浪能、海流能、宇宙射线等深度空间资源都具有一个点的不断利用和做功的特征。

2. The Most Basic Characteristics of Depth Space Resources
The continuous utilization and work at a point of resources is the most important feature of depth space resources. In depth space, there are only energy changes among points but no horizontal and wide chemical reactions with other materials in breadth space. In addition to solar energy and wind energy, tidal energy, wave energy, current energy, cosmic rays and other depth space resources all have characteristics of continuous utilization and work at one point.

3. 深度空间资源生物与植物类“点”的作用公式和定律的关系
深度空间生物资源“点”的作用讲的主要是指能源植物类深度空间资源,而深度空间其他植物类,主要是指粮食、含其他有色金属等成分的植物。深度空间生物资源包括的内容比深度空间资源植物类包括的内容要广,它除了指为生产能源而种植的能量作物、农林产品、水生植物、农业废弃物之外,还包括农林产品加工业废弃物、薪柴、人畜粪便、城镇生活垃圾等。深度空间生物资源“点”的利用规律与深度空间植物类资源“点”的利用规律,其实并无性质上的根本区别,因此,深度空间生物资源“点”的作用公式和定律,与深度空间资源植物类“点”的作用公式和定律为同一个公式和定律。

3. The Relationships of Acting Formulas and Laws between Depth Space Resource Creating Material "Points" and Plant Type "Points"
The role of depth space creating material "points" mainly refers to depth space resource of energy plants, however other plants of depth space resource mainly refers to grain and other non-ferrous metal-containing plants. Depth space creating material resource has a wider scope than that of depth space plant type. It refers to not only energy crops, agricultural and forestry

products, water plants and agricultural wastes for energy production, but also agricultural product processing industry waste, fuel wood, animal waste and urban living garbage, etc. Actually there is no fundamental difference between the nature of depth space resource creating material "points" and plant type "points" utilization laws. Therefore, both of them have the same formula and law.

◆ 公式和定律 Formula and Law

1. 深度空间资源点的作用公式
公式一:
N 代表自然世界;
D₁ 代表太阳能等深度空间资源;
Δ₁ 代表一个点的做功和延伸。

$$N \rightarrow D_1 \xrightarrow{\Delta_1} N \quad (1)$$

1. Acting formula at one point of depth space resources;
Formula 1:
N stands for natural world;
D₁ stands for solar energy and other depth space resources;
Δ₁ stands for the work and extension at one point.

$$N \rightarrow D_1 \xrightarrow{\Delta_1} N \quad (1)$$

如果用语言述说,这一公式的内容也可以这样表达,N代表自然世界,D₁代表太阳能等深度空间资源,Δ₁代表在自然状态下,利用自然世界自然产生的能量,在一个点的直接做功和延伸,经过点的做功 N 又迅速回到自然状态,从 N 到 N,经过 D₁ 点的做功,自然生态两者之间的关系是平衡的。

In words, this formula can be expressed as follows: N stands for natural world; D₁ stands for solar energy and other depth space resources; Δ₁ stands for, under natural conditions, energy produced in nature directly work and extend at one point, after work at one point, N returns to natural condition quickly. From N to N, after work at point D₁, relation between ecology is balanced.

2. 深度空间资源利用的定律一
深度空间资源利用的定律一是,在自然界利用自然产生的能量,在一个点上直接做功和延伸,但不改变产生做功能量自然属性的本身的物质结构。

2. The Law 2 of Depth Space Resources Utilization
It can also be expressed by law. The Law 1 applied by depth space resources is to use the energy generated in natural world to work and extend at one point directly but does not change substance structure of natural nature of working energy

3. 深度空间生物资源“点”的作用公式
公式二:
N 代表资源利用前自然世界;

D_1 代表藻类等生产型深度空间资源;
 Δ_2 代表做功的合理时间段;
 N_2 代表资源回收利用后自然世界。

$$N \xrightarrow{D_1} \Delta_1 \xrightarrow{N_1} N_2 \quad (2)$$

3. Acting Formula of "Point" of Depth Space Material Resources

Formula 2:

N stands for the natural world before resource utilization;

D_1 stands for algae and other productive depth space resources;

Δ_1 stands for the reasonable time period of work;

N_2 stands for the natural world after resources recovery from utilization.

$$N \xrightarrow{D_2} \Delta_2 \xrightarrow{N_2} N_2 \quad (2)$$

N 代表自然世界, 经过植物型资源利用 D_1 , 到资源利用的化学做功 Δ_1 , 并经过点循环恢复的合理时间段, 取得与自然生态两者之间关系的平衡。因此, 最终从 N 到 N_2 自然生态之间的两者关系是平衡的。

N stands for natural world, from plant resources utilization D_1 to chemical work of resources utilization Δ_1 and after the reasonable time period of point circulation recovery, obtain a balance between nature and ecology. Eventually, the relation between N and N_2 is balanced.

4. 深度空间生物质资源利用的定律二

深度空间生物质资源利用的定律二是, 利用资源“点”的做功和延伸, 并再经过资源“点”循环恢复的合理时间段, 取得利用资源与自然生态两者之间关系的平衡。

4. The Law 2 of Depth Space Resources Utilization

The Law 2 of depth space resources utilization is: using the work and extension of resources "point" and then after a reasonable time period of resources "point" circulation recovery, balance is obtained between resources utilization and natural ecology.

◆ 图表示意 Diagram

1. 广度与深度空间三维示意图 (图 1.2.1)

1. Three-dimensional diagram of breadth and depth space (Figure 1.2.1)

1.3 深度空间理论时间概念的定义

1.3 Definition of Time Concept of Depth Space Theory

◆ 定义 Definitions

1. 深度空间理论时间概念的定义

深度空间资源时间概念, 陈述了深度空间资源不同时间段的不同状态, 引进了利用资源过程中联系时间概念的理解, 包括了能源等资源在循环状态下一种带有时间概念的

分析和界定。深度空间资源“点”的时间概念, 是指太阳能等能源资源在一个点上的瞬间做功和延伸。而“点循环”的时间概念, 是指植物型资源在一个点上的瞬间概念涵盖了对于人类利用植物型资源, 对生存环境产生影响的一个合理的时间段, “点与点”资源循环的时间概念, 是指人类社会对废钢、废玻璃等可再生资源的循环使用。

能源等资源深度空间规律的发现和提出, 其最有说服力的论证是, 深度空间能源等资源的利用是在一个点做功和延伸的过程中, 不改变或微弱地影响自然环境, 对自然环境产生化学结构的影响, 或是只是合理时间段的影响, 在合理时间段之后即不恢复自然状态。

1. Time Conception of Depth Space Theory

The Time conception of Depth Space Theory, which points out different states of depth space resource at different time periods and introduces the understanding with time conception during the process of resource utilization, contains the analysis and delimitation with the time conception under the condition of circulation. The time concept of depth space resource point refers to instantaneous work and extension at one point by solar energy and other energy resources. And the time concept of time-point circulation of plant type resource, which covers all plant type resource - using by human, is reasonable time period that impacts on living environment. The time concept of resource circulation of point-to-point refers to recycling steel scrap, waste glass and other renewable resources by human society.

For discovery and proposal of energy and resources depth space law, the most convincing argument is that utilization of depth space energy and other resources during work and extension at one point does not change or slightly affects natural environment which has no chemical-structure influence on natural environment or just has influence for a reasonable time period, after which it will return to natural condition.

◆ 名词解释和名词 Term Definitions

1. 点的时间概念

深度空间资源点的时间概念是利用自然界自然产生的力, 直接做功, 是直接、快速的, 也是最清洁的。

1. Time Conception of Point

The time concept of depth space resource point refers to the work directly by the natural power. It is the most speedy and sanitary.

2. 点循环的时间概念

深度空间植物型资源利用点循环的时间概念是指植物型资源在其一生中通过对二氧化碳等化学物质的吸收, 经生产被人类利用释放, 再吸收再释放的循环时间过程。植物型资源在吸收、释放的过程中对有害气体和化学物质的吸收和释放几乎是相等的, 保持了自然世界的生态平衡, 对人类生存环境和自然的影响甚微。植物型资源点循环的时间概念, 包括能源植物点循环和其他植物资源点循环等类型。

2. Time Concept of Point Circulation

The time concept of depth space resource point circulation of plant type refers to a time process, in which the plant-like resource absorbs chemicals such as Carbon Dioxide to release energy through human utilization, then the repetition of absorbing and releasing. The toxic gas energy through human utilization, then the repetition of absorbing and releasing. This process helps and chemicals absorbed and released by the plants nearly stay equivalent and this process helps maintain ecological balance of natural and has few impacts on the living environment of mankind and nature. The plant type of depth space resource is composed of several parts such as the point circulation of energy plant and that of non-energy plants.

3. 能源植物“点循环”的时间概念

3. Time Concept of Point Circulation of Plant Type Energy Resources

4. 金属资源植物“点循环”的时间概念

4. Time Concept of Point Circulation of Plant Type Metal Resources

5. 其他资源“点循环”的时间概念

5. Time Concept of Point Circulation of Other Type Resources

6. 点与点循环的时间概念

深度空间点与点资源循环的时间概念是指人类在利用可再生资源(废钢、废玻璃等)的过程中, 利用可再生资源循环使用, 减少资源消耗和能耗, 并努力在利用过程中把二氧化碳等有害气体和物质的排放, 控制在对人类生活和自然环境无影响或影响甚微的合理的循环时间段内。

6. Time Concept of Point-to-point Circulation

The time concept of depth space resources point-to-point circulation refers to that during the process of human utilization of renewable resources (scrap steel, waste glass, ect.), human try to reduce the consumption of resource and the emission of CO₂ and other harmful gases, then keep impacts on human life and nature within the limits of sound circulation or merely none impacts.

7. 深度空间能源等资源利用的阶段性时间

深度空间能源等资源利用的阶段性时间组合内容有“点”的时间概念、植物类资源“点循环”的时间概念和“点与点”循环的时间概念。它们的重要特征是, 在给人提供能源等资源的过程中, 在自然状态下, 利用自然界自然产生的力, 在一个点的直接做功和延伸。植物类点循环的时间概念和点与点资源循环的时间概念是建立在循环过程中不对人类生活和自然世界产生负面影响的基础上, 是以能源等

7. Utilization Stage of Depth Space Energy and Other Resources

The combined contents of utilization stage period of depth space energy and other resources have time concepts of "point", "point circulation" of plant resources and "point-to-point" other resources to human, under natural conditions, the resources use the energy generated by natural world to work and extend directly at one point; maintain ecological balance; while the

time concept of plant point circulation and that of point-to-point resources circulation are based on the reasonable time period during which circulation process leave no negative influence on human life and natural world, as well as on the premise that energy and other resources circulation has no negative influence on human life and natural world.

8. 一个点做功时间段的界定特征

一个点做功时间段, 植物类点循环的时间概念和点与点循环的时间概念的界定特征是: (一) 利用自然之力, 直接做功, 对环境无影响; (二) 从做功到回到自然的循环过程中, 不对人类的生活环境造成影响, 或者说仅仅是微乎其微的影响。

8. Defining Characteristics of Working Time Range at One Point

For the working time range at one point, defining characteristics of time concepts of plant point circulation and point-to-point circulation are as follows. Firstly, use natural energy to work directly, leaving no influence on environment. Secondly, circulation progress from work back to nature should have no influence on human's living environment or just very little influence.

1.4 广度空间资源的物质形态及性质

1.4 Material Form and Nature of Breadth Space Resources

◆ 名词解释 Term Definitions

1. 广度空间资源

广度空间资源主要是指煤炭、石油和天然气等能源性资源。广度空间资源也包括铁矿石、铝矿这些污染较小, 但却资源有限, 相对于深度空间资源并非是一个“点”上不断延伸利用的带有“广度”属性的资源。

1. Breadth Space Resources

The breadth space resources mainly refer to coal, petroleum, natural gas and other energy resources. Breadth space resources also include iron ore, aluminum ore which are less polluting but limited. Compared to depth space resources, they do not extend continuously on one "point" but own attributes of "breadth".

2. 广度空间资源物质形态及性质的主要特征

广度空间资源的物质形态及性质主要特征是: 物质处于相对稳定或睡眠状态。广度空间资源的物质形态及性质主要特征是在被人类利用之前都处于相对的稳定状态。广度空间中煤炭、石油和天然气等资源在被人利用之前都属于化学能。人类利用煤炭、石油和天然气化石能源等资源, 并改变了这些资源的分子结构, 导致了自然环境循环的不平衡, 破坏了生态环境。

2. Main Characteristics of Material Form and Nature of Breadth Space Resources

广度空间资源是“一条线”上的“平面”的不断“延伸”。

2. Main Characteristics of Material Form and Nature of Breadth Space Resources

Main characteristics of material form and nature of breadth space resources are that

clearly express and understand new "political" and "economic" geography phenomenon in objective world. Divided by political geography, sea power, land power and air power belong to geopolitics. While depth space control power is another kind of new "geopolitics" since human entered 21st century-renewable times. It is the space control power of new generation resources other resources as needed own the key to harmonious development with nature concerning deplete energy and other resources of nations and human, and meanwhile own the key to peace and own the primary material base necessary for controlling the fate of world and human.

2. 深度空间和深度空间控制权的8个特征

- (1) 能源等资源的利用特征呈现出一个“点”的不断延伸和“复制”。
(2) 深度空间资源陆上和海洋都有。深度空间和深度空间控制权的概念还包含了太空——“新海洋”。
(3) 广度和深度空间都具有无限的特征。广度空间从微观空间一直向陆上、海洋和“新海洋”无限延伸。深度空间太阳能、植物能源可再生资源等资源也是取之不尽、用之不竭，深度“无限”。
(4) 部分深度空间资源还包括了“点”与“点”的回收利用，比如废旧钢铁、报纸、玻璃等可再生资源回收利用。
(5) 深度空间和深度空间控制权是唯一可用十字坐标的形式，来解释人类在资源控制利用的关系上与海权、陆权、空权以十字相交，和谐可持续发展的控制权。
(6) “海洋”深度空间控制权，其实是跨越海权、陆权、空权，在海、陆、空的任何一个点上都可以不断延伸、复制的控制权。
(7) 一些能源等资源的利用在平面上合理的空间内呈现出多层次的一个“点”的不断延伸和“复制”。打一个容易理解的比喻，一个7层的楼房按平面布置每个窗口都可在纵向和横向采集利用太阳能，并可与风能等可再生资源组合采集。这对于太阳能等可再生资源利用率的估算具有重要的意义。(虽然，深度空间资源十分丰富，但在利用空间布局上更要讲究合理和科学，并非是越多越好。)
(8) 大部分深度空间资源都具有“四维”性质，一直线、二平面、三立体、四新时段新时间。

2. Eight Characteristics of Depth Space and Depth Space Control Power

- (1) Utilization of energy and other resources shows constant "extension" and "copy" on a "point".
(2) Depth space resources exist both on land and in ocean. Concept of breadth and depth space control power also include space——"new ocean".
(3) Breadth and depth space are both endless. Breadth space constantly extends to land, ocean and "new ocean" in micro space, while depth space resources such as solar energy, plant energy and other renewable resources are endless.
(4) Some depth space resources also include the recycle and utility between "point" and "point", such as recycle and utility of scrapped steel, newspapers, glass and other

renewable resources.
(5) Breadth and depth space control power is the only one that can use the coordinate system to explain the cross relationship between resource control power and sea, land and air power, as well as the harmonious sustainable development.

(6) "Ocean" depth space control power, in fact, is that stepping across sea power, land power and air power, and that can be continuously extended and "copied" on any point in ocean, on land and in the air.

(7) Utilization of some energy and other resources shows multi-level constant extension and "copy" on a "point" in the flat reasonable space. Take a metaphor for understanding. In a seven-story building, we can collect and utilize solar power both vertically and horizontally at every window, as well as wind power and other renewable resources. This is significant to the utility rate estimate of solar and other renewable resources. (Although depth space resources are very rich, it needs to be reasonably and scientifically used in space layout, not the more, the better.)

(8) Most depth space resources possess "four-dimensional" character, first straight line; second plane surface, third solid and fourth new times and new time.

- 3. 陆上深度空间资源
3. Depth Space Resources on Land

图表示意 Diagram

- 1. 深度空间控制权的作用 (图 2.1.2)
1. The Role of Depth Space Control Power (Figure 2.1.2)
2. 海权、陆权、空权与深度空间控制权关系示意图 (图 2.1.4)
2. Relationship Diagram of sea power, land power, air power and depth space control power (Figure 2.1.4)
3. 陆上和“海洋”能源等资源广度及深度空间关系示意图 (图 2.1.5)
3. Relationship Diagram of breadth and depth space resources on land and in the sea (Figure 2.1.5)

2.4 和谐海洋“三阶段论”
"Three-Stage Theory" of Harmonious Ocean

名词解释 Term Definitions

1. 和谐海洋三段论
世界上早期海洋国家荷兰强大海军建立的目的，也印证了是为保护远洋商船队运输；那时，海军为荷兰远洋商船保驾护航，而商船缴纳的税收又投入舰队建设。在和平时期，能源等资源以及产品的运输，不同船型、不同港口的配置运输，物

流成本有很大的差异。通过远洋、近洋运输的科学合理配置，并调整产业结构，要努力大幅度节约生产和物流成本，打造绿色港航。因此，和谐海洋三段论的第一部分是经略海洋应把全球资源配置与经济目的紧密联系起来。

石化能源等资源最终是要被用完的。海洋风能、太阳能、波浪能、潮汐能等可再生资源取之不尽，用之不竭。当代能源等资源匮乏、环境污染，已成为如今天生最严重的问题。利用海洋风能等可再生资源优质能源是解决能源资源匮乏、环境污染问题的理想选择。和谐海洋三段论的第二部分是开发海洋，获取优质能源等资源，释放新生产力，走可持续发展的道路。

和谐海洋三段论的第三部分是促进国际和平交流，促进世界和谐。世界和谐的基础，更多是要寻找非利益的冲突。远洋、近洋运输的科学合理配置节约物流成本，开发海上风能等可再生资源，并逐步取代化石能源，为环境保护和减少、消除利益冲突，为国际和平交流，为世界和谐提供了基础。和谐海洋三段论主要回答了现代社会和海洋环境与海权的关系问题，并论述了当代社会新的海洋权益的三段式理论。和谐海洋三要素的组成是互为协调、相互联系和作用的。

1. Three-Stage Theory of Harmonious Ocean

In early times, the establishment of powerful Dutch navy also confirms that it is for escorting the ocean merchant fleet transport. At that time, the navies were established to escort the merchant fleets, while the merchant fleets would pay taxes into navy construction. In peaceful time, due to different ships and different ports transports, logistic costs will differ greatly in transportation of product, energy and other resources. With the scientific and rational allocation of ocean and short-range ocean transportation and the adjustment of industry structure, we could save logistics and production costs to create green ports and shipping. Therefore, the first part of Three-Stage Theory of Harmonious Ocean is to associate global resource allocation with economic purposes.

While fossil fuels will be exhausted eventually, the rich natural energy such as wind, sunshine, waves and tides are inexhaustible in supply and always available for use. Considering as the deadly lack of energy resources and the environment pollutions have become the most serious problems facing humanity today, the second part of Three-Stage Theory of Harmonious Ocean, that is to develop the oceans and gain access to high-quality energy, releases the productivity and provides approaches to sustainable development.

The third part of Three-Stage Theory of Harmonious Ocean is to promote the international peace and conducting the way of communication and cooperation. The basis of world harmony is ocean and short-sea transportation, together with development of offshore wind and other renewable energy resources which will gradually replace fossil fuels, laid a base for protecting environment, reducing and eliminating marine interest conflicts, promoting international peace, communication and harmony. Three-Stage Theory of Harmonious Ocean points out the relations between modern society and harmonious ocean environment, sea power, it also discusses new

three stage theory about sea power in modern times. Three important elements of harmonious ocean are inter-coordinated, inter-connected and interacted.

第3章 多维空间资源的经济发展
Chapter 3 Economic Development of Multi-dimensional Space Resource

3.2 深度空间资源下一个新生产力的发展
3.2 Next New Productivity Growth of Depth Space Resource

定理 Theorems

- 1. 宏观角度下的广度空间资源利用
以目前的科技水平从宏观角度去理解广度空间化石能源的利用，显然离不开这样一个定理或解释：化石能源+运输+做功反应=环境污染。
1. Theorems of Breadth Space Resources Utilization under Macroscopic Angle
To understand breadth space resources utilization under macroscopic angle by current technology, apparently we cannot do without such a theorem or explanation: fossil energy + transportation + working response = environmental pollution.

名词 Terms

- 1. 深度空间资源——新生产力的优势
1. Depth Space Resources——Advantages of New Productivity

第4章 广度空间资源的历史和未来
Chapter 4 History and Future of Breadth Space Resource

4.1 自然科学广度空间资源利用的历史和未来
4.1 History and Future of Breadth Space Resource Utilization of Natural Science

名词 Terms

- 1. 处理好“平面延伸”的瞬间 意味着亿万年的祥和安宁
1. The moment we dealt with "plane extension" implies millions of years of good and peace

4.2 地缘政治广度空间资源利用的历史和未来 4.2 History and Future of Breadth Space Resource Utilization of Geopolitics

◆ 名词解释和名词 Term Definitions

1. 地缘政治广度空间资源与深度空间资源的本质区别
地缘政治广度空间资源与深度空间资源的本质区别在于：从资源利用做功时间（如地球把循环时间也算在一起）和对环境的影响上来讲广度空间资源做功时间长、排放量多、影响人类生存、破坏自然环境。深度空间资源是一个“点”的利用、瞬间做功或在做功之后的物质循环以对环境的影响有限、适合人类生活为准则。获取广度空间资源对于空间的要求需要“横向”“平面”的扩张来获取资源，深度空间资源获取以点的利用为基础，因此，获取资源无需依靠对于空间的“横向”“平面”的不断扩张。

人类在走着一套习惯上从地缘政治、经济学理论到自然科学都未曾怀疑过的在“平面”空间上扩张、扩张、再扩张的经典的发展理念。这一传统的发展思路要提高人的生活水平解决人类的发展问题，答案似乎只有一个，不断“平面”地扩张空间，获取财富。结果是带来战争、资源缺乏、环境问题并造成自身的生存危机。

广度空间的地缘政治是“平面”地不断扩张空间，深度空间地缘政治是点的“纵向”发展无需依靠“横向”的不断扩张。

1. The Essential Difference between Breadth Space and Depth Space Resources of Geopolitics

The essential difference between breadth space and depth space resources of geopolitics is that when making use of depth space resources, it will not only take a long time to work (if the cycle time is included), but also produce excessive emissions that impact the existence of human beings and destroy natural environment. However, when it comes to depth space resources, it makes use of one "point" to work, then material recycling which produced when or after work instantly has limited impact on natural environment for human beings. Compared with getting breadth space resources which needs the extension of space both in "horizon" and "plane", getting depth space resources depends on the utilization of point but not continuously space expanding.

It is known that people have a classical development concept with space expanding constantly, and this concept never be suspected by any theory of geopolitics, economics or natural science. If we intend to use this concept to improve living standard and solve the problem of human development, it seems that we have no other choice but expanding space in "plane" to get resources. In this way, raised are all kinds of problems such as war, resource scarcity, environmental pollution and human existence crisis.

2. 地缘政治走向海洋、“新海洋”的发展规则

二次世界大战证明了一个公理，把地理扩展作为国家和民族的发展战略，损人害

己，必将遭到正义力量的制裁。同样的道理，人类在走向“新海洋”的过程中，倘若仍以纯空间扩张为目的，假如有外星人的话，势必会受到外星人的关注或制裁。加限制，又会受到人类和比人类更为发达的其他生物（如果有活的话）与自然和谐的制裁。当然，人类也需要自卫能力，但是，是为了捍卫正义而存在。

2. Development Rules of Geopolitical towards Ocean and "New Ocean"

World War II illustrates a point that taking geographic extension as the development strategy of the country and nation will not only injure others and hurt oneself but also be subjected to sanction by justice. For the same reason, if people still aimed at expanding space during the process towards "new ocean", people would suffer attention or sanction of aliens if they really exist. And besides that, it is affected by natural carrying capacity, natural harmony, as well as special attentions and harsh sanctions of other creatures which are more advanced than human beings. However, just for justice, it is allowed for people to have enough power to protect themselves.

4.3 经济发展广度空间资源利用的历史和未来

4.3 History and Future of Breadth Space Resource Utilization of Economic Development

◆ 名词 Terms

- 1. 广度和深度空间资源与可再生和不可再生资源的概念区别
1. Differences between the Concepts of Breadth and Depth Space Resources, Renewable and Nonrenewable Resources

第5章 深度空间资源的历史和未来 Chapter 5 History and Future of Depth Space Resources

5.1 自然科学深度空间资源利用的历史和未来 5.1 History and Future of Depth Space Resource Utilization of Natural Science

◆ 定理 Theorems

- 1. 地球深度空间资源组合运用的质能平衡定理
地球深度空间资源在地球生态循环中在质能平衡上已基本形成，属自然状态。地球深度空间资源、参考质能守恒定律，根据深度空间资源定律一做功后的深度空间资源

资源，其总的自然状态下组合式运用的深度空间资源与自然状态下组合式的深度空间资源质能平衡，并且物质结构稳定。

1. Mass and Energy Balance Theorem of Depth Space Resources on Earth

It is natural state that mass and energy balance of depth space resource has formed basically in earth's ecological cycle. Under natural conditions, mass and energy as well as material structure of integrated depth space resources could remain stable after depth space resources' working in accordance with law one of depth space resources and law of the conservation of energy.

2. 地球利用“新海洋”空间资源的质能不平衡定理

在地球资源质能原来平衡的基础上，大量输入“新海洋”——太空空间资源，包括深度空间资源。当输入的太空空间资源超过一定的值，则会导致地球自然状态下新的质能的不平衡，进而影响地球生态的循环。

2. Mass and Energy Unbalance Theorem of "New Ocean" Space Resources Used on Earth
Increasing are a great deal of "new ocean" — the space resources which covers depth space resources, based on balance of mass and energy of resources on earth. And when the space resources exceed a certain amount, it will cause imbalance of the Earth's new mass-energy under natural state, then to affect the Earth's ecological cycle.

5.2 地缘政治深度空间资源利用的历史和未来

5.2 History and Future of Depth Space Resource Utilization of Geopolitics

◆ 图表示意 Diagram

- 1. 多维空间资源地缘政治的时间维度 (图 5.2.1)
1. Multi-dimensional Time Dimension of Geopolitics (Figure 5.2.1)

5.3 经济发展深度空间资源利用的历史和未来

5.3 History and Future of Depth Space Resources Utilization of Economic Development

◆ 名词解释 Term Definitions

1. 深度空间资源经济
深度空间资源经济是指针对工业革命之后，为解决广度空间化石能源等资源的利用而产生的资源和环境问题，国家、全球间的经济活动。

1. Depth Space Resources Economy
Depth Space Resources Economy refers to national and global economic activities aimed at

solving the problems of resources and environment raised from the utilization of breadth space fossil energy and other resources since industrial revolution.

2. “新海洋”资源经济
“新海洋”资源经济是指资源利用向太空延伸，人类开发利用资源而产生的经济活动，“新海洋”资源经济同样可分为“新海洋”广度空间资源经济和深度空间资源经济两部分。

2. "New Ocean" Resources Economy
"New Ocean" Resources Economy refers to economic activities resulted from human's developing and using resources with extending the utilization into space. Likewise, it is comprised of two parts—"new ocean" breadth space resources and "new ocean" depth space resources.

3. 四维资源经济
四维资源经济是在原来对于资源经济“立体”研究的基础上，加上时间维度的观察和研究。第四维是指广度空间资源经济和深度空间资源经济的时间维度特征。

3. Four-Dimensional Resources Economy
Four-Dimensional Resources Economy refers to the observation and study of time dimension based on the "solid" research of resources economy of both space and time. And the fourth dimension is time dimension of breadth and depth space resources.

- 4. 多维空间资源学后果的时间证明
4. Time Proof of Multi-Dimensional Resources

◆ 图表示意 Diagram

- 1. 多维空间资源经济发展的时间维度 (图 5.3.1)
1. Time Dimension of Multi-Dimensional Resources Economic Development (Figure 5.3.1)

第6章 走向“新海洋”——太空 Chapter 6 Step towards "New Ocean" ——Outer Space

6.1 走向“新海洋”——太空 6.1 Step Towards "New Ocean" ——Outer Space

◆ 名词 Terms

- 1. 做宇宙的“白细胞”
1. To Be "White Blood Cell" of Outer Space

2. “新海洋”——太空人的“公理”
“新海洋”——太空人的“公理”是指太空人在自然界生存的符合自然规律的“公理”。

2. “New Ocean”——Truth of Spacemen
“New Ocean”——“Truth of Spacemen” refers to the truth that spacemen exist in nature, and it complies with natural law.

6.2 “新海洋”的“地缘政治”
6.2 “Geopolitics” of “New Ocean”

◆ 名词解释 Terms and Definitions

1. “新海洋”“地缘政治”
如果有外星文明生命体，外星人会不会给地球人带来威胁？应该从几方面去分析：（一）比我们发达的外星人是否已经解决了资源和环境问题。如果已经解决了资源和环境问题，对我们就不会有太大的威胁。但是，鉴于人类社会的发展尚未解决资源和环境问题，并且，其发展模式理念存在着很大的不科学性，外星人就会十分注意人类社会的发展趋势，一旦发现人类的发展将对外星人和自然界产生不利的、达到一定程度的威胁，就有可能对人类发动攻击。（二）在发展中尚未解决资源和环境问题，发展理念落后的外星人，毫无疑问，这一类外星人就会如同星球大战大片所描绘的一样，一旦不成熟的地球人与这一类不成熟外星人有了接触的机会，就有可能引发星球大战。当然，还可能有第三、第四种等情况，比如，发达的外星人帮助地球人解决资源和环境问题，发展中的地球人帮助落后的外星人解决资源和环境问题。

1. “Geopolitics” of “New Ocean”
Would aliens pose any threat to humans if they did exist? We should analyze as follows. First, it is unknown whether developed aliens have solved the resources and environment problems or not. And if they have, then we would have no threat. However, because human society have not solved the resource and environment problems so far, and its development mode and idea remains unscientific in many ways, aliens pay close attention on the trend of human society development. As long as our human developments make an adverse effect on nature or out space, aliens would plan attacks against human being. Second, just as depicted in the star wars movies, no doubt there would be a star wars when underdeveloped aliens who have not solved the resource and environment problems run into human beings who are not wisdom. Certainly, there are other situations such as developed aliens help human to solve the resource and environment problems, or developing human help underdeveloped aliens to solve the resource and environment problems.

6.3 “新海洋”——太空的深度空间资源开发
6.3 Depth Space Resource Development of Outer Space
——“New Ocean”

◆ 名词 Terms

1. 太空太阳能利用深度空间资源点的成功特征
1. Characteristics of Doing Work by Space Solar Power's Utilization of Depth Space Resources' Points

第7章 资源利用的哲学原理
Chapter 7 Philosophy of Resource Utilization

7.1 多维空间资源学里的时间单度
7.1 Time Dimension of Multi-dimensional Space Resource

◆ 定理 Theorems

1. 人的时代空间边界与环境影响范围的三定理
定理一：多维空间资源人的时代空间边界与环境影响范围的总能量、人的交通能力和人对环境影响的范围基本成正比关系。

定理二：从自然和社会学的角度去分析，部分资源“功”的能量越大，即正反面两面的“功”越大。换言之，正面做“功”能量越大，反面破坏力也越大。原子能开发、基因技术、克隆技术、空间技术、纳米技术和网络技术方面所取得的巨大成功都有可能演变成巨大的灾难。此外，它们还有一个特点，就是体积小，能量巨大。

定理三：人的生产力和战争的时空工具，做“功”能量越大，爆发时间大多呈现“缩短”特征，反之，则变慢。

定理一是指范围而言。定理二是指功率而言。定理三是指速度而言。

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1. Three Theorems about Boundary of Human's Space Age and Its Impact on Environment

Theorem 1: In Hyperspace resources, there is a proportionality relationship between human's ability to and its impact on environment; there is a proportionality relationship between human's ability to and its impact on environment; there is a proportionality relationship between human's ability to and its impact on environment.

Theorem 2: From natural and sociological perspective, the greater energy some resource transport and the impact of humanity on environment.

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technology, nanotechnology, internet technology and so on, are possible to change into great disasters. Moreover, they are small in size and great in energy.

Theorem 3: The greater energy people's productivity and wars' space-time tools make, the more explosion time will be reduced. Otherwise, that explosion time will be increased.

Theorem 1, 2 and 3 are in terms of scope, power and speed.

◆ 公理 Axioms

1. 时代空间边界与环境影响范围三定理的推导公理

时代空间边界与环境影响范围三个平凡的定理告诉我们一个简单的公理，随着人类时空工具做功能量的放大，时间呈现“缩短”特征，对自然的影响速度加快，如果所做之功违背自然规律，则破坏速度加快。

1. Derivation Axioms of Three Theorems of Boundary of Human's Space Age and Its Impact on Environment

Besides, these three ordinary theorems told us a simple axiom, which is with the amplification of energy human space-time tools work, time may present the characteristic of shortening and that will speed up the influence on nature. Just as we know, if human work against nature law, it speed up the destruction.

◆ 关系式 Relations

1. 心态与资源的关系式：

心态 = 维度 (方向 + 时间) = 资源 + 环境

1. Relations of Mood, Resources and Environment

Mood = dimension (direction + time) = resource + environment

◆ 名词解释和名词 Term Definitions

1. 多维状态下经济发展的时间维度

经济发展的时间维度，主要反映在通过经济手段，校正人类社会违背资源自然循环规律的做法。属应用科学，即通过经济手段校正资源利用的“时间误差”。从时间内容上也可以体现为历史经济成本、污染时间、未来治理时间和成本。本书所指的经济发展的时间维度，主要是指自然科学、新地缘政治、经济发展多维状态下的经济发展的时间维度。

1. Time Dimension of Economic Development under Multi-dimensional state
Time dimension of economic development, which belongs to applied science, mainly reflect in the actions that correct human's violation of resource and natural circulation by means of economics. That is taking economic means to correct "time errors" of the utilization of resources. And on the side of time, it could refer to the economic cost in history, the time of pollution, the cost and time of governing in the future. The time dimension of economic development in this book mainly refers to the time dimension under natural science, new geopolitics and multi-dimensional state of economic development.

2. 心态与资源的关系
人是有思想和情感的动物，人的思想和情感决定了他的所作所为。人的所作所为又客观地影响了他所生活的世界。心态是人的思想及情感的一种本质的心理状态。这种本质的心理状态，通过不同方向的时间维度，分配着资源和环境的不同“命运”。

2. Relations of Mood, Resources and Environment

Men are animals with thoughts and emotions. Man's thoughts and emotions determine his mind of thoughts and emotions. And this basic mind allocates the resources and environments by the time dimensions of different directions.

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◆ 图表示意 Diagram

- 1. 广度空间资源利用与时间对应关系图 (以石油为例) (图 7.1.1)
- 1. Figures of breadth space resources utilization corresponds to time (take petroleum for example) (Figure 7.1.1)
- 2. 时代空间边界与环境影响范围 (图 7.1.4)
- 2. Boundary of space age and scope of impact on environment (Figure 7.1.4)

7.2 可变化的广度空间资源与核能利用

7.2 Variable Breadth Space Resource and Utilization of Nuclear Energy

◆ 名词 Terms

- 1. 广度空间资源利用性质的可变性
- 1. Variability of the Utilization Characteristic of Breadth Space Resources

7.3 我们共同面临的考验

7.3 Challenges We All Face

◆ 名词解释 Term Definitions

- 1. 三维地缘政治的局限性
三维的地缘政治由于科学发展以及观察的局限性其实很少考虑或缺乏条件考量四维地缘政治的资源利用、环境伦理、科学发展。
1. Limitations of the Three-Dimensional Geopolitics
Due to the limitations of scientific development and observation, the three dimensional geopolitics seldom or lack of conditions to consider resources utilization, environmental ethics and scientific development as the four dimensional geopolitics do.
- 2. 四维地缘政治
四维地缘政治与传统(三维)地缘政治最大的突破是在现代科学的基础上,借助于多维空间资源论自然科学部分的创立,借助于多维空间资源论自然科学部分定义、资源利用广度和深度空间时间模型等相关理论的提出,从而为提出四维地缘政治,创造考量四维地缘政治的资源利用、环境伦理、科学发展的标准创造了不可缺少的条件。
2. The Four-Dimensional Geopolitics
Compared with the traditional three-dimensional geopolitics, the biggest breakthrough of the four-dimensional geopolitics is that it is based on modern science and with the help of the creation of natural scientific part of multi-dimensional space, the scope of resources utilization.

time mold of depth space and other related theories. Therefore, the indispensable conditions are created for the establishment of the four-dimensional geopolitics as well as its standard of resources utilization, environmental ethics and science development.
And the additional thing is that the fourth dimension refers to time.

7.4 赢得千万年的安宁

7.4 Winning Peaceful Life for Tens of Thousands of Years

◆ 定义 Definitions

- 1. 广度空间资源利用时间维度长度的定义
1. Definition of Time Dimension Length of the Utilization of Breadth Space Resources
- 2. 深度空间资源利用点的时间维度长度的定义
2. Definition of Time Dimension Length of the Utilization of Depth Space Resources Points
- 3. 深度空间植物型资源利用点的时间维度长度的定义
3. Definition of Time Dimension Length of the Utilization of Depth Space Resources Points in the Type of Plants
- 4. 深度空间点与点资源利用的时间维度长度的定义
4. Definitions of Time Dimension Length of Depth Space Points and the Utilization of Point Resources

◆ 名词解释和名词 Term Definitions

- 1. 广度和深度空间资源的四维空间
1. The Four-Dimensional Space of Breadth and Depth Space Resources
- 2. 广度和深度空间资源四维空间的分别
2. Difference of the Four-Dimensional Space between Breadth and Depth Space Resources
- 3. 深度与广度空间资源作为工业原料的利用价值一样
深度空间资源除了在能源的利用价值与广度空间资源一样之外,在资源作为工业原料的使用上与广度空间资源的利用也一样。碳、氢、氧和氮这四种元素是食物和水的基本元素,也是塑料、纸张、衣服等的工业原料,深度空间植物资源中大量拥有的碳、氢、氧和氮四种元素;与广度空间资源比如大量拥有碳、氢、氧和氮四种元素,其元素的构成情况基本相似。
3. Same Value of Breadth and Depth Space Resources as Industrial Raw Materials
Depth space resources have the same values as breadth space resources in the utilization of energy, and are same used as industrial raw materials. As we know, these four kinds of elements—Carbon, Hydrogen, Oxygen and Nitrogen—are not only the basic elements of food and water but also industrial raw materials of plastic, paper, clothes and so on. Plants of depth resources are rich in the four elements above, and its elemental form is similar to the breadth resources.

- space resources whose coals are abundant in Carbon, Hydrogen, Oxygen and Nitrogen.
- 4. 深度空间植物资源和广度空间资源的区别
4. Difference between Depth Space Resources in the Type of Plants and Breadth Space Resources
- 5. 地缘政治的公地悲剧将比经济发展上的公地悲剧更悲惨
5. "Tragedy of the Commons" of Geopolitics is more Miserable Than That of Economics
- 6. 广度空间资源平面的“幻方”性质
6. "Magic Square" Characteristic of Breadth Space Resources Plane
- 7. 深度空间资源与广度空间资源时间维度长度的一句话区别
深度空间资源是瞬间、直接做功,广度空间资源是3.5亿年的一次性做功。
7. Difference of Time Dimension Length between Depth and Breadth Space Resources in a Word

Depth space resources work instantaneously and directly while breadth space resources work once in 350 million years.
8. 深度空间资源与广度空间资源时间维度长度的区别
深度空间资源与广度空间资源之间最大区别的重要内容之一是在于深度空间资源利用(做功)的时间过程,其质能转变的环境影响,控制在人类生活环境合适的范围内。也就是深度空间资源与广度空间资源时间维度长度的区别。深度空间资源利用(做功)的时间维度长度适合人类生活环境,广度空间资源利用(做功)的时间维度长度存在着人类生活环境的破坏性。
8. Difference of Time Dimension Length between Depth and Breadth Space Resources
The biggest difference between depth and breadth space resources lies in the time process of the utilization of depth space resources (working), its impacts on environment and its capacity to control it within suitable scope of human beings when mass energy transformation takes place. We can say the difference is that the time length of the utilization of depth space resources (working) fit human's living environment, however, the time length of the utilization of breadth space resources (working) can damage human's living environment.

◆ 图表示意 Diagram

- 1. 多维空间资源学平面、三维、时间表示示意图 (图 7.4.2)
- 1. Figures of Multi-dimensional Space in Two-dimension, Three-dimension and Time (Figure 7.4.1)

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多维空间资源学理论从第一篇相关论文在2006年提出,到本书出版已有7年,在这7年时间里得到了许多专家、学者的帮助和支持,对于这些专家和学者的关心、爱护及支持,在此表示衷心的感谢。对于在这里要感谢吕炳全教授、张光威教授、海洋出版社对本书出版过程中的支持。

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