

原载 2019 年 9 月 19 日“浙江省新型高校智库
——浙江舟山群岛新区研究内参”（第 25 期）

Originally published on "New Think Tank of Universities in Zhejiang Province --
Internal References for the Study of Zhoushan Archipelago New Area in Zhejiang
(No. 25), September 19, 2019

应该把“多维空间资源学”推广为世界一流学科

“Multi-dimensional Space Resources Science”Should Be Promoted as a World - class Discipline

现在是一个需要创建“新学科”的时代。旧的学科体系怎能解决新的时代之问？新时代里，新事物、新问题层出不穷。中国的学科建设究竟应该创建什么样的新学科以及形成怎样的学科体系，是学术界目前要关心的重点问题。为此，专访了多维空间资源学创建者、浙江省新型高校智库---浙江舟山群岛研究中心海洋资源与多维空间研究所所长、舟山市港航和口岸管理局研究员、浙江海洋大学经济与管理学院兼职教授蔡一鸣先生。

This is a time for the creation of “new disciplines”.How can the old disciplinary system solve the problems of the new era?In the new era, new things and new problems emerge one after another.What kind of new discipline should be created and what kind of discipline system should be formed in China's discipline construction are the key issues that the academic circle is concerned about at present.For this purpose, we interviewed Cai Yiming, founder of Multi-dimensional Space Resources Science, director of New Think Tank of Universities in Zhejiang Province-Institute of Marine Resources and Multi-dimensional Space (Zhejiang Zhoushan Archipelago Research Center), reseacher of Zhoushan Harbors and Ports Administration, and adjunct professor of College of Economics and Management,Zhejiang Ocean University.

一、多维空间资源学是一种对资源的多维空间理解

I . Multi-dimensional resource science is a multi-dimensional understanding of resources

蔡一鸣介绍说，多维空间资源学属于前沿新学科。它有机地把资源利用的特性与自然科学、地缘政治、经济发展有机地联系起来，并全部赋予并行的相联系的时间维；这对于当今人类发展环境生态、地缘政治、经济发展面临的问题具有独到的见解和相对应的应对策略。所以，多维空间资源学，既是基础理论，又是应用理论。且该学科理论在近十年前提出的应用理论的主要内容：深度空间资源利用的实践和如今可持续环境、地缘政治及经济的发展表明了具有鲜明的先进性和可操作性。

Cai Yiming said, Multi-dimensional Space Resources Science is a kind of the frontier new disciplines. It organically links the characteristics of resource utilization with natural science, geopolitics, and economic development, and gives parallel and

related time dimension to all of them, which enables a unique insight and corresponding countermeasures to the problems faced with in human development, including environmental ecology, geopolitics, and economic development. Therefore, Multi-dimensional Space Resources Science is both the basic theory and the applied theory. Moreover, the main content of the application theory of this discipline, which was put forward nearly ten years ago, the practice of the utilization of deep space resources, together with the development of sustainable environment, geopolitics, and economy shows that the discipline is highly advanced and feasible.

二、“海洋开发”新理论是多维空间理论的一种体现形式

II. The new theory of “ocean exploitation” is a manifestation of the multi-dimensional space theory

蔡一鸣撰写的前沿学科著作《多维空间资源学》是把“海洋开发”的广度和深度空间理论作为“多维空间资源学”的主要理论体现的。他给“海洋开发”广度与深度空间的定义是：广度的海洋空间资源利用，是纯粹指海洋空间资源，从微观空间到整个海洋空间，都可称为海洋空间资源的广度。由于海洋开发从某种程度上，也可以理解是向空间的开发，向太空发展，也是向“新海洋”空间发展。广度的空间资源几乎是“无限延伸”的。海洋空间资源的“深度”是指海洋风能、太阳能等可再生能源、资源的开发。由于这些可再生能源等资源也是取之不尽和用之不竭的，所以深度空间资源几乎也是“无限延伸”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。广度和深度空间资源包括陆上、海洋和太空资源的开发。

Cai Yiming's frontier subject book, *Multi-dimensional Space Resources Science*, embodies the breadth and depth space theory of “ocean exploitation” as the main theory of “Multi-dimensional Space Resources Science”. He defined the breadth and depth space of “ocean exploitation” as: **the breadth of ocean space resources utilization is purely referring to the ocean space resources. From the micro space to the whole ocean space, it can be called the breadth of ocean space resources.** Ocean exploitation, to some extent, can also be understood as the development of space, the development of universe, and also the development of “new ocean” space. The breadth of space resources is almost “infinitely extended”. **The “depth” of ocean space resources refers to the development of renewable energy and resources such as marine wind and solar energy.** Since resources such as renewable energy are also inexhaustible, the depth of space resources is also almost “infinitely extended”. The development and utilization of renewable energy and resources such as solar energy in space in the future can also included in the development and utilization of what is called depth space. The breadth and depth of space resources include the exploitation of land, sea, and universe resources.

三. “多维空间资源学”理论核心: 空间的“广度”和“深度”

III. Theoretical core of “Multi-dimensional Space Resources Science”: “breadth” and “depth” of space

其中的关键是对里面的“广度”和“深度”空间怎么理解用十字坐标来表示: 广度空间是从海洋微观空间向海洋、“新海洋”横向“一条线”上的不断延伸; 深度空间是在广度空间“一条线”上的“一个点”上纵向的不断延伸。这个理论在对待资源问题上, 在学术上都有原创性的新视角和新理解。如对废旧钢铁、石化产品可以不断循环利用的回收资源也归纳到了可以“无限延伸”的深度空间资源利用中。如在自然科学、地缘政治、经济发展中, 都要在过去和未来的时间维上做文章。又及对化石能源的利用, 若用广度空间维度的地缘政治思考, 就决定了其在地域空间上要横向“一条线”地不断对外扩张, 围绕着有限资源的利用和扩张, 就会在邻国与邻国, 地区与地区之间容易造成巨大的矛盾, 并引发环境问题、争斗和战争。而用深度空间维度的地缘政治思考, 能源利用是一个“点”的纵向利用, 不需要不断对外扩张。这就可以避免围绕资源利用问题引起的多重矛盾。这是对传统地缘政治学的发展; 传统地缘政治学海权论和陆权论等理论一般只注重平面的联系。

The key is how to understand the “breadth” and “depth” of the space. By using the cross coordinate to express, **the breadth space is a continuous extension of a horizontal “line” from the microscopic space to the ocean and “new ocean”;** **the depth space is the continuous lengthwise extension on the “point” on the “line” of the breadth space.** This theory has an original new perspective and new understanding on both the issue of resources and academic problems. For example, the recycled resources for waste steel and petrochemical products can also be summarized into the “infinitely extended” depth of space resources utilization. In natural science, geopolitics, and economic development, they all have to play with the past and future time dimension. In addition, for the use of fossil fuels, if thinking in geopolitical breadth spatial dimension, it has been doomed that we human have to expand in “a transverse line” in geographical space continuously. Around the use and expansion of limited resources, it is easy to cause huge conflicts between neighboring countries and between regions, and cause environmental problems, fights and wars. While according to the geopolitical thinking of the depth spatial dimension, energy utilization is the vertical utilization of a “point”, which does not need to constantly expand outside. Thus, multiple conflicts surrounding resource utilization issues can be avoided. This is the development of traditional geopolitics; traditional geopolitics theories such as sea power theory and land power theory only pay attention to the connection of plane.

四、多维空间资源学具有原创性特质

IV. Multi-dimensional Space Resources Science owns the characteristic of originality

2011 年经教育部科技查新工作站对蔡一鸣多维空间资源学的主要体现理论《“海洋开发”的广度与深度空间论》、《深度空间控制权论》、《和谐海洋三段论》三篇发表在国际核心刊物学术论文成果的查新, 科技查新报告的结论是: 国内外均未见有其他类似的提出和论述, 是原创性和创新性的。2014 年海洋出版社出

版的《多维空间资源学》，在学术界多维空间资源学提出的新名词、新定义和新专用术语有 96 个，用中英文都附在了本书的附件内。这些新名词、新定义和新专用术语等研究成果，所包含的许多意义还有待于通过教育得到更进一步的挖掘和传承。所以，《多维空间资源学》是国内少有的由中国人创建的从名词到理论体系，具有原创性、前沿性、系统性、综合性的学科理论。

In 2011, according to the novelty search conducted by Science and Technology Research Station of the Ministry of Education, Cai Yiming's theory of multi-dimensional space resources in *The Breadth and Depth Space Theory of "Ocean Exploitation"*, *The Theory of the Depth Space Controlling Right*, and *Harmonious Ocean Syllogism*, the three academic papers published in international core journals, is original and innovative. No other similar proposals and discussions have been found at home and abroad. In the book *Multi-dimensional Space Resources Science* published by Ocean Publishing House in 2014, 96 new terms have been put forward in the study of Multi-dimensional Space Resources in academic circles, which are attached in the appendix in both Chinese and English. These new terms, new definitions and other research results contain many meanings that need to be further explored and inherited through education. Therefore, Multi-dimensional Space Resources Science is a rare system of nouns and theories created by Chinese people, with original, frontier, systematic, and comprehensive subject theory.

五、多维空间资源学具有一定程度的国际国内影响力

V. Multi-dimensional Space Resource Science has a certain degree of international and domestic influence

作为新学科理论的主要体现理论部分，《“海洋开发”的广度与深度空间论》的学术论文已被全文收集到了为纪念马耳他前总统、第 45 届联大主席德马尔科对国际海洋事务做出杰出贡献而出版的国际书籍特刊（TELOS Volume V – Special Edition in Honour of Guido de Marco）中。在这本特刊中，其余 10 位都是国际上很有影响的专家学者谈了对德马尔科的怀念和德马尔科对国际海洋事务做出的杰出贡献，只有蔡一鸣介绍了他自己的学术理论。同时，对于多维空间资源学，中国海洋报、浙江日报、环球时报（英文版）人民日报、新华社内刊等媒体也曾就有关内容多次作了宣传报导，有十多篇论文用中英文在国际学术刊物发表。经过十多年的交流和完善，实际上在国内外已具有一定影响。

As the main body of a new discipline theory, the academic paper *The Breadth and Depth Space Theory of "Ocean Exploitation"* has been collected in full in *TELOS Volume V - Special Edition in Honour of Guido DE Marco*, a special issue of international books in commemoration of the outstanding contributions made to international maritime affairs by the former President of Malta and President of the 45th UN General Assembly Javier de Marco. In this special issue, the other 10 experts and scholars who are very influential in the world talked about the memory of De Marco and his outstanding contribution to international maritime affairs, while only Cai Yiming introduced his own

academic theory. Meanwhile, *China Ocean News*, *Zhejiang Daily*, *Global Times (English version)*, *People's Daily*, *Xinhua News Agency* and other media have made many propaganda reports on the science of Multi-dimensional Space Resources, and more than ten papers have been published in international academic journals in both Chinese and English. After more than ten years of communication and improvement, in fact, it has a certain influence at home and abroad.

目前具有原创性的系统性的世界一流学科是国人教育创新中最薄弱的环节，尤其是基础理论。但是，如果能把“多维空间资源学”作为我国推广创建世界一流学科的选择，列入支持发展的项目，就民族教育创新来说，意义非凡。

At present, the original and systematic world-class disciplines are the weakest knot in the educational innovation of Chinese people, especially the basic theories. However, if “Multi-dimensional Space Resource Science” can be included in the project to support development as the choice to promote and establish a world-class discipline in China, it will be of great significance for national education innovation.

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人物和企业新简介

蔡一鸣，男，研究员。上海心也环境发展中心法定代表人。在舟山港航管理局和驻沪办工作期间，利用业余时间创建完成了多维空间资源学前沿学科理论的专著；并创建了新地缘政治“深度空间控制权”理论，以及从资源利用角度提出的“人类发展资源利用广度与深度空间的进化论”。研究方向为资源与环境、地缘政治和经济发展的基础与应用理论。对于多维空间资源学所发表论文的核心内容据国家教育部科技查新工作站鉴定，目前国内外文文献报道中均未见其他作者有类似提出和论述。值得一提的是，2011年在纪念马耳他前总统、第45届联大主席德马尔科对国际海洋事务做出杰出贡献的TELOS国际学术丛书特刊中，全文收录了他的多维空间资源学中的核心理论。这一期特刊撰写文章的其他10位均是国际上很有影响的专家学者，在这期特刊上谈了德马尔科对海洋的杰出贡献，唯有蔡一鸣一位只谈了他的多维空间资源学中的核心理论，显然，这期特刊用这一特殊的方式，在表达怀念马耳他前总统德马尔科对海洋事业做出重要贡献的同时，也表示了对蔡一鸣提出的前沿学科新理论的高度认可和重视。

蔡一鸣研究员撰写出版了独创性的前沿学科理论《多维空间资源学》专著一部，在国际、国家和省级的专业及学术刊物上发表论文80多篇。共主持或参与国际、国家和省级重点课题（项目）8个。《多

维空间资源学》中的相关理论《环球时报》(英文版)、《中国海洋报》、《浙江日报》、《人民日报》、新华社内刊等媒体曾作过采访报道和介绍。

上海心也环境发展中心是由蔡一鸣研究员创办的民营性质的企业。中心业务以资源利用的可持续发展事业为主,结合蔡一鸣研究员创建的前沿学科多维空间资源学理论和新地缘政治深度空间控制权理论,以及从资源利用角度提出的人类发展资源利用广度与深度空间的进化论;以上海心也环境发展中心网站为载体, **工作目标:** 努力在环境保护,可持续发展领域打造成国内外信息,学术交流(包括教育)和智库有影响、有特色的平台。新生产力的发展,同样体现在维度运作上,多维空间资源学根据资源利用的特点,均匀地把资源利用的四维空间应用在自然科学,地缘政治和经济发展的基础理论与应用理论上。

上海心也环境发展中心是2020年11月新注册的企业。目前中心网站已上线,正在建设中,欢迎关注。中心网址: www.xyhj-ahe.com
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