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Review Article

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Global Socialism and Local Market Capitalism Economic Remembering Proletarian Revolutionary Secretary Deng Xiaoping and Xi Zhongxun

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ABSTRACT

What are the differences between President Xi Jinping's socialism with Chinese characteristics and President Deng Xiaoping's socialism with Chinese characteristics? This article will use historical facts to explain and explore these differences. In 1987, Secretary Xi Zhongxun revised Xie Ganquan's "Global Socialism and Local Capitalism One country Two systems" to "Global Socialism and Local Market Capitalism." In 1993, President Deng Xiaoping proposed the "socialist market economy" in his speech during his southern tour in Shenzhen. Compared to Secretary Xi Zhongxun's "Global Socialism and Local Market Capitalism," Deng Xiaoping omitted the "Global" and "Local" terms, made a completely different concept. President Deng Xiaoping's socialist market economy played a driving role in China's initial transition from unitary socialism to reform and opening up. President Deng Xiaoping's socialism with Chinese characteristics was a transitional "socialist market economy"; President Xi Jinping's socialism with Chinese characteristics is a realistic Global Socialism and Local Market Capitalism. Under the leadership of President Xi and the Party Central Committee, leading cadres at all levels, in their respective posts, are leading the people in building a prosperous and flourishing socialism with Chinese characteristics in the Xi Jinping era. Based on topological correspondence, the seventh part evolves "global socialism and local market capital economy" into the global integral local differential GILD forward and inverse algorithm, and proposes the joint research of social science and natural science, their mutual topological transformation and super science, positive space and negative space and invisible science.

Introduction

What are the differences between President Xi's socialism with Chinese characteristics and Chairman Deng's socialism with Chinese characteristics? This article uses historical facts to illustrate and discuss. This paper is organized as follows: We propose " Global Socialism and Local Capitalism One Country Two Systems" in section 2; Global Socialism and Local Market Capitalism Economic are described in section 3; 4 Socialist Market Economy by Chairman Deng XiaoPing are described in section 4; In section 5, we state President Xi Jinping's socialism with Chinese characteristics is Global Socialist and Local Market Capital Economy. In section 6, we state President Xi Jinping's Socialism with Chinese Characteristics Protects and Prospers the Market Capital Economy; In section 7, We propose Social Science and Natural Science Joint Research and topological transformations between each other.

Global Socialism and Local Capitalism One Country Two Systems

In May 1986, Xie Ganquan returned to China after completing his PhD and postdoctor in USA. On June 5th, the Hunan Daily's front page reported, "Returning to China for the Great Cause." Regarding policies regarding Hong Kong and Taiwan, Chairman Deng proposed "One Country Two Systems," where mainland socialism coexists with capitalism in Hong Kong and Taiwan. Domestically, the Central Committee and the Provincial Party Committee advocated bold reform and bold opening up. How to be bold reform and bold requires deep thought. The author Ganquan Xie proposed and suggest implementing "Global Socialism and Local Capitalism One Country Two Systems" and delivered speeches at the Provincial CPPCC and the Provincial Party Committee and Provincial Government Reform and Opening-up Conference, receiving support from some leaders.

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Provincial CPPCC Chairman Liu Zheng, Vice Chairman Tong Ying, and Zhou Zheng expressed their agreement. Tong Ying, Minister of United Front Work and Vice Chairman of the Provincial CPPCC, also expressed his support, believing it to be thoughtful and reasonable. Governor Chen Bangzhu was very interested in Xie Ganquan's earlier proposal to find "reform opportunities" on "policy boundaries." He only smiled in support of Xie Ganquan's further proposal of " Global socialism and Local capitalism one country two systems." He specifically approved Xie Ganquan's initiative to establish the Hunan Provincial Society of Computational Mathematics Application Software as a provincial-level Society. This was the first such Society in China and the world. Currently, China's national computing societies are still second-tier associations. Except for Hunan Province, all other provincial computing societies are second-tier.

Global Socialism and Local Market Capital Economic

In January 1987, Sun Yat-sen University President Li Yuesheng and the author of this article, Xie Ganquan, attended a symposium for returned experts from the Guangdong Provincial Party Committee. Meeting with Secretary Xi Zhongxun, Xie Ganquan handed a note to Secretary Xi Zhongxun that wrote, " Global socialism and Local capitalism One country two systems." Secretary Xi Zhongxun pulled Xie Ganquan to sit next to him, his eyes sparkling as he exclaimed that it made sense and had a profound impact. He then changed the phrase to Global socialism and Local Market Capital Economic," claiming it was his son's idea. When Xie asked who his son was, others reminded him not to ask. Secretary Xi kindly advised: "It's better to talk about the economy."

Socialist Market Economy by Chairman Deng Xiao Ping

In 1993, Chairman Deng Xiaoping proposed the "socialist market economy" in a speech during his southern tour in Shenzhen. Compared to Secretary Xi's "Global socialism and Local Market Capitalism Economic", Chairman Deng omitted the "Global" and "Local", are two completely different concepts. In the early stages of China's transition from monolithic socialism to reform and opening up, Chairman Deng's socialist market economy played a pioneering role. During the Mao Zedong era and the Lenin-Stalin era, socialist planned economies and capitalist market economies coexisted during the Cold War. In today's era of highly developed international capitalist market economies, Chairman Deng Xiaoping's socialist market economy is easily confused and assimilated in the competition of the international market economy. Neither Marxist-Leninist economics nor capitalist economics has a socialist market economy. There is only a socialist planned economy and a capitalist market economy. Many people abroad and domestic cadres and the masses believe that the socialist market economy is synonymous with the capitalist market economy. During this period, some leading cadres strayed from the socialist path and engaged in corruption. These deviations from Global socialism need to be corrected.

President Xi Jinping's socialism with Chinese characteristics is Global Socialist and Local Market Capital Economy

Since taking office, President Xi Jinping has inherited the work of his revolutionary predecessors, upholding Marxism-Leninism and Mao Zedong Thought. He recognizes the coexistence and distinction between socialism and a market-capital economy, scientifically integrating the two, and implementing the systems and policies of a comprehensive global socialist and partially local market-capital economy, which he and his father, Xi Zhongxun, proposed. This is socialism with Chinese characteristics in the Xi Jinping era. Comparatively speaking, President Deng Xiaoping's socialism with Chinese characteristics was a transitional socialist market economy, while President Xi Jinping's socialism with Chinese characteristics is realistic Global Socialist and Local Market Capital Economy. The difference between the two is stark. In implementing President Xi Jinping's socialism with Chinese characteristics, we must use the law to punish corruption and bribery by a minority of leading cadres who have lost sight of their original aspirations, and implement targeted poverty alleviation. We must put the people first. "Officials must not seek personal gain" is President Xi Jinping's explicit directive on "a comprehensive socialist and partially market-capital economy." Leading cadres must respectfully adhere to this directive and, in their respective posts, lead the people in building a prosperous socialism with Chinese characteristics in the Xi Jinping era.

President Xi Jinping's Socialism with Chinese Characteristics Protects and Prospers the Market Capital Economy

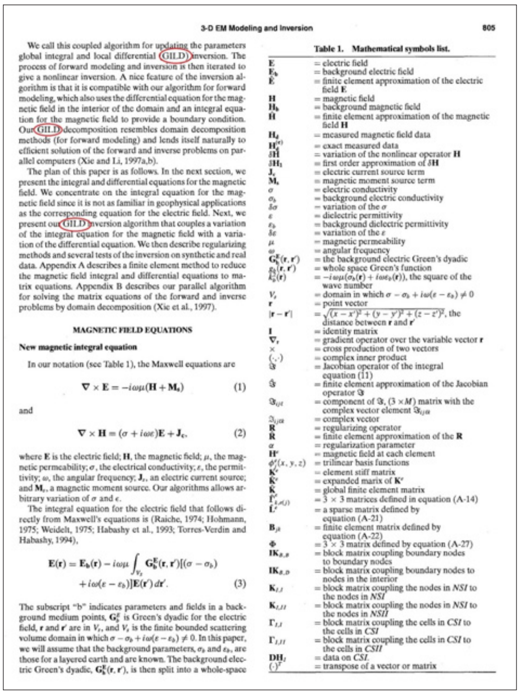
Beijing News: On April 7th, Central Huijin Investment Co., Ltd. issued an announcement: "Central Huijin is firmly optimistic about the development prospects of China's capital market and fully recognizes the current value of A-share allocations. It has once again increased its holdings of exchange-traded funds (ETFs) and will continue to increase its holdings in the future, resolutely safeguarding the stable operation of the capital market." This demonstrates that upholding Global socialism, while safeguarding the local market capital economy. Recently, proletarian revolutionary Zhu Danhua wrote that corrupt leaders are the taking the capitalist road. Adhering to global socialism, leaders at all levels, under the leadership of the Party Central Committee with President Xi Jinping at its core, firmly follow the socialist path while flexibly adopting local market capitalism. " you must forge iron with strength." In great China, Global socialism and local market capital economies complement each other, creating a brilliant drama of prosperous and glorious development, farmers singing in the fields, and merchants singing in the marketplace. We welcome and support local market capital, protect its development, and commend entrepreneurs like Mr. Cao Dewang who demonstrate business acumen in the local market economy under the leadership of global socialism. Under the system of global socialism and local market capitalism, national capitalists serve as a protective shelter forest for the national economy.

Social Science and Natural Science Joint Research and Topological Transformations Between Each Other

Social science and natural science joint research has always been the research philosophy and approach of Xie Ganquan and Li Jianhua. We draw inspiration from the social science and philosophical thinking of our revolutionary predecessors, developing original theories and methods based on practical problems, never referencing others' work.

From 1993 to 1995, based on the philosophical principle of correspondence, from social science “Global Socialism and Local Market Capital Economic”, we developed the GILD

method for direct forward modeling and inverse calculations of global integral equations and local differential equations, corresponding to the social models of global socialism and local market capitalism. The GILD method has played a significant role in research in mathematics, physics, and geophysics, and was published as an outstanding paper in the American Journal of Geophysics in 2000, attached as is Exhibit 1 . In particular, in 2001, we used GILD inverse calculations to explore the ultra-low-flying aircraft during the 9/11 incident, discovering the phenomenon of invisibility, attached as is Exhibit 2. In 2002, inspired by the theory of global socialism and localized market capitalism, we developed the Global Local forward and inverse calculation method (GL forward and inverse method) based on the principle of correspondence. In the 23 years since 2002, we have completed research on the GLLH, attached as is Exhibit 3. and GLHUA manufacturable, completely invisible cloaks [1-18]. We have achieved an invisible cloak that can be made from ordinary materials and proposed the concepts of positive and negative space and the science of invisibility Appendix 1 [1]. We have demonstrated the correctness of the global socialist and local market capitalism theory through both super natural science and super social science, Appendix 1



3-D EM Modeling and Inversion 805

We call this coupled algorithm for updating the parameters global integral and local differential (GILD) inversion. The process of forward modeling and inversion is then iterated to give a nonlinear inversion. A nice feature of the inversion algorithm is that it is compatible with our algorithm for forward modeling, which also uses the differential equation for the magnetic field in the interior of the domain and an integral equation for the magnetic field to provide a boundary condition. Our GILD decomposition resembles domain decomposition methods (for forward modeling) and lends itself naturally to efficient solution of the forward and inverse problems on parallel computers (Xie and Li, 1997a,b).

The plan of this paper is as follows. In the next section, we present the integral and differential equations for the magnetic field. We concentrate on the integral equation for the magnetic field since it is not as familiar in geophysical applications as the corresponding equation for the electric field. Next, we present our GILD inversion algorithm that couples a variation of the integral equation for the magnetic field with a variation of the differential equation. We then describe regularizing methods and several tests of the inversion on synthetic and real data. Appendix A describes a finite element method to reduce the magnetic field integral and differential equations to matrix equations. Appendix B describes our parallel algorithm for solving the matrix equations of the forward and inverse problems by domain decomposition (Xie et al., 1997).

MAGNETIC FIELD EQUATIONS

New magnetic integral equation

In our notation (see Table 1), the Maxwell equations are

$$\nabla \times \mathbf{E} = -i\omega\mu(\mathbf{H} + \mathbf{M}_s) \quad (1)$$

and

$$\nabla \times \mathbf{H} = (\sigma + i\omega\varepsilon)\mathbf{E} + \mathbf{J}_e, \quad (2)$$

where $\mathbf{E}$ is the electric field; $\mathbf{H}$, the magnetic field; μ, the magnetic permeability; σ, the electrical conductivity; ε, the permittivity; ω, the angular frequency; $\mathbf{J}_e$, an electric current source; and $\mathbf{M}_s$, a magnetic moment source. Our algorithms allows arbitrary variation of σ and ϵ.

The integral equation for the electric field that follows directly from Maxwell's equations is (Raiche, 1974; Hohmann, 1975; Weidelt, 1975; Habashy et al., 1993; Torres-Verdin and Habashy, 1994),

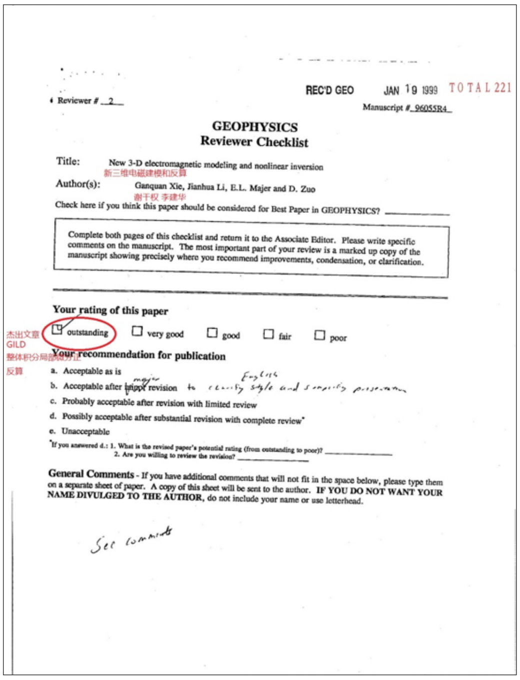
$$\mathbf{E}(\mathbf{r}) = \mathbf{E}_b(\mathbf{r}) - i\omega\mu \int_{V_s} \mathbf{G}_b^E(\mathbf{r}, \mathbf{r}')[(\sigma - \sigma_b) + i\omega(\varepsilon - \varepsilon_b)]\mathbf{E}(\mathbf{r}')\, d\mathbf{r}'. \quad (3)$$

The subscript "b" indicates parameters and fields in a background medium points, $\mathbf{G}_b^E$ is Green's dyadic for the electric field, $\mathbf{r}$ and $\mathbf{r}'$ are in V_s, and V_s is the finite bounded scattering volume domain in which $\sigma - \sigma_b + i\omega(\varepsilon - \varepsilon_b) \neq 0$. In this paper, we will assume that the background parameters, σ_b and ε_b, are those for a layered earth and are known. The background electric Green's dyadic, $\mathbf{G}_b^E(\mathbf{r}, \mathbf{r}')$, is then split into a whole-space

Table 1. Mathematical symbols list.

$\mathbf{E}$	= electric field
$\mathbf{E}_b$	= background electric field
$\hat{\mathbf{E}}$	= finite element approximation of the electric field $\mathbf{E}$
$\mathbf{H}$	= magnetic field
$\mathbf{H}_b$	= background magnetic field
$\hat{\mathbf{H}}$	= finite element approximation of the magnetic field $\mathbf{H}$
$\mathbf{H}_d$	= measured magnetic field data
$\mathbf{H}_d^{(e)}$	= exact measured data
$\delta\mathbf{H}$	= variation of the nonlinear operator $\mathbf{H}$
$\delta\mathbf{H}_1$	= first order approximation of $\delta\mathbf{H}$
$\mathbf{J}_e$	= electric current source term
$\mathbf{M}_s$	= magnetic moment source term
σ	= electric conductivity
σ_b	= background electric conductivity
$\delta\sigma$	= variation of the σ
ε	= dielectric permittivity
ε_b	= background dielectric permittivity
$\delta\varepsilon$	= variation of the ε
μ	= magnetic permeability
ω	= angular frequency
$\mathbf{G}_b^E(\mathbf{r}, \mathbf{r}')$	= the background electric Green's dyadic
$g_b(\mathbf{r}, \mathbf{r}')$	= whole space Green's function
$k_b^2(\mathbf{r})$	= $-i\omega\mu(\sigma_b(\mathbf{r}) + i\omega\varepsilon_b(\mathbf{r}))$, the square of the wave number
V_s	= domain in which $\sigma - \sigma_b + i\omega(\varepsilon - \varepsilon_b) \neq 0$
$\mathbf{r}$	= point vector
$\lvert\mathbf{r} - \mathbf{r}'\rvert$	= $\sqrt{(x - x')^2 + (y - y')^2 + (z - z')^2}$, the distance between $\mathbf{r}$ and $\mathbf{r}'$
$\mathbf{I}$	= identity matrix
∇_r	= gradient operator over the variable vector $\mathbf{r}$
$\times$	= cross production of two vectors
$(\cdot, \cdot)$	= complex inner product
$\mathfrak{J}$	= Jacobian operator of the integral equation (11)
$\hat{\mathfrak{J}}$	= finite element approximation of the Jacobian operator $\mathfrak{J}$
$\mathfrak{J}_{ijl}$	= component of $\mathfrak{J}$, $(3 \times M)$ matrix with the complex vector element $\mathfrak{J}_{ij\alpha}$
$\mathfrak{J}_{ij\alpha}$	= complex vector
$\mathbf{R}$	= regularizing operator
$\hat{\mathbf{R}}$	= finite element approximation of the $\mathbf{R}$
α	= regularization parameter
$\mathbf{H}^e$	= magnetic field at each element
$\phi_i^e(x, y, z)$	= trilinear basis functions
$\mathbf{K}^e$	= element stiff matrix
$\hat{\mathbf{K}}^e$	= expanded marix of $\mathbf{K}^e$
$\hat{\mathbf{K}}$	= global finite element matrix
$\mathbf{\Gamma}_{k,\sigma(j)}^e$	= 3×3 matrices defined in equation (A-14)
$\mathbf{L}^e$	= a sparse matrix defined by equation (A-21)
$\mathbf{B}_{jk}$	= finite element matrix defined by equation (A-22)
$\mathbf{\Phi}$	= 3×3 matrix defined by equation (A-27)
$\mathbf{IK}_{B,B}$	= block matrix coupling boundary nodes to boundary nodes
$\mathbf{IK}_{B,D}$	= block matrix coupling boundary nodes to nodes in the interior
$\mathbf{K}_{I,I}$	= block matrix coupling the nodes in NSI to the nodes in NSI
$\mathbf{K}_{I,II}$	= block matrix coupling the nodes in NSI to the nodes in $NSII$
$\mathbf{\Gamma}_{I,I}$	= block matrix coupling the cells in CSI to the cells in CSI
$\mathbf{\Gamma}_{I,II}$	= block matrix coupling the cells in CSI to the cells in $CSII$
$\mathbf{DH}_I$	= data on CSI
$(\cdot)^T$	= transpose of a vector or matrix

Exhibit 1



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See comments

Exhibit 2

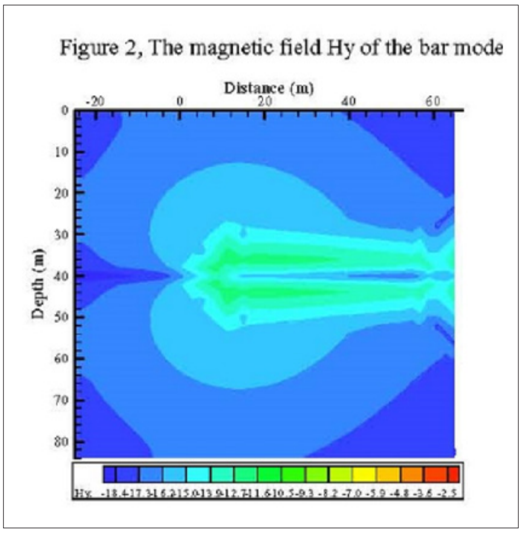


Exhibit 3

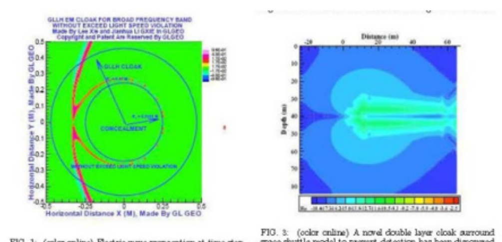


FIG. 1: (color online) Electric wave propagation at time step 118dt, the wave front is curved as the crescent like, red S in right is source location

FIG. 3: (color online) A novel double layer cloak surround space shuttle model to prevent detection has been discovered in GILD EM inversion in 2001, which was published in SEG expand abstract in 2002[] .

to outside of the inner layer. There is no exceed light speed violation in the GL inner layer cloak. In the GL outer layer cloak, we obtained reduced degenerate cloak material, when $r \to R_1$ $\varepsilon_r \mu_\theta \approx (r - R_1) \to 0$. However, Ps cloak is strong degenerate material, in which[14] the $\varepsilon_r \mu_\theta = R_2^2 (r - R_1)^2 / r^2 / (R_2 - R_1)^2$, when $r \to R_1$ $\varepsilon_r \mu_\theta \approx (r - R_2)^2 \to 0$.. We proposed a GLWF double layer EM cloaks in broad frequency band [16] to overcome the exceed light speed. The Figure 9 in [16] shows that the EM wave propagation in Ps cloak does exceed light speed . The Figure 7 in [16] exhibits that the EM wave propagation in GLWF double layer cloak does not exceed light speed. As a great jump of the GLWF cloak [16], by using GL Metro Carlo inversion [3], we propose the new GLLH cloaks with class material $a_{\alpha\beta} \log^\alpha (b_{\alpha\beta}/h) h^\beta$, one of which is formulized by (2)-(5) in this paper. The cloak has nonzero and positive ε_r, μ_r, ε_θ,and μ_θ in whole cloak domain $R_i \le r \le R_o$, that is its large advantage over than the 2rd order strong singular Ps cloak with zero parameters on the inner boundary, $\varepsilon_r = 0$ and $\mu_r = 0$. We proved that the refractive index of our GLLH cloak is larger than one or equal to one, $n(r) = \sqrt{\varepsilon_r \mu_\theta} \ge 1$, in whole cloak domain $R_i \le r \le R_o$, when $R_i = 0.249$, $R_o = 0.47$. By using GL EM modeling [2], the novel full EM wave propagation in the cloak show that there is no *exceed light speed* violation in our GLLH cloak in in this paper. The novel EM wave propagation and distinct front branching in the GLLH cloak by GL EM modeling are presented in in this paper. The EM wave front in GLLH cloak is behind of the front in free space. The figures 8-13, show that the wave front is successively curved as a crescent like and propagates slower than the light in free space. In particular, at time steps $118dt$, in the GLLH cloak, the figure 1 shows the curved EM wave front is much similar with the crescent. At the time step $119dt$, the electric wave inside of the GLLH cloak propagates slower than light speed, moreover, its two crescent peaks intersect at a novel front branching point. At the front branching point, the front is split to two fronts. One is outgoing front, which is propagating forward to out of the cloak and bring out most wave

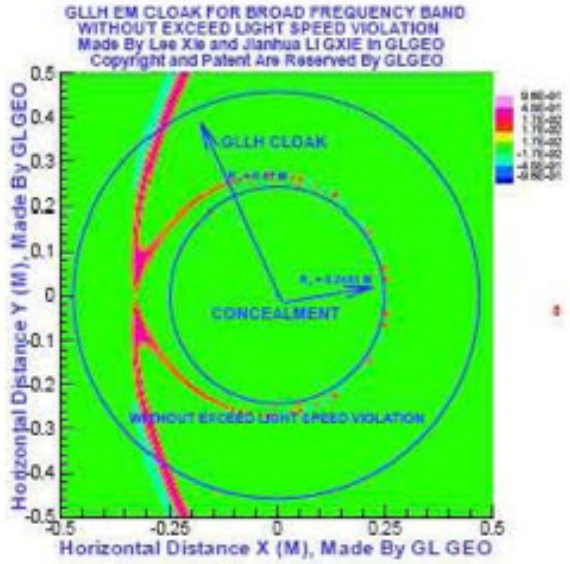


FIG. 1: (color online) Electric wave propagation at time step $118dt$, the wave front is curved as the crescent like, red S in right is source location

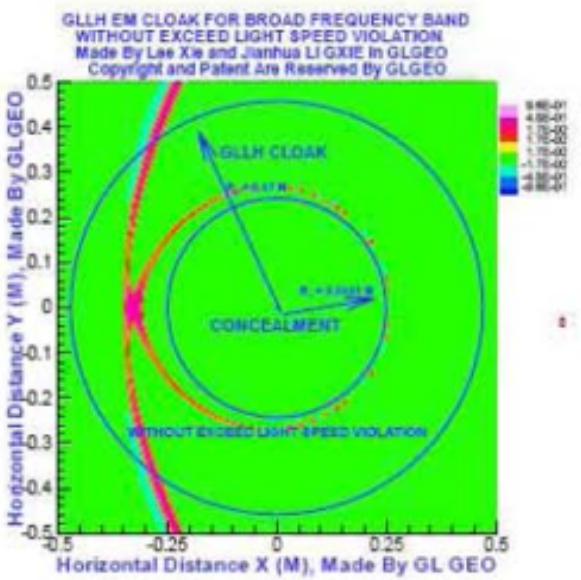


FIG. 2: (color online) Electric wave propagation at time step $119dt$, the two peaks of the crescent like wave front intersects at a branching point, red S in right is source location

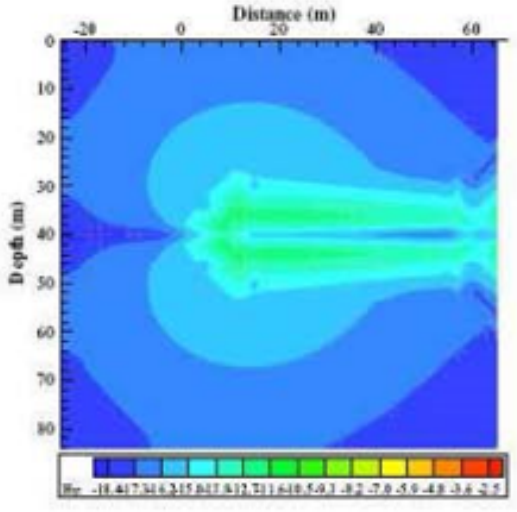
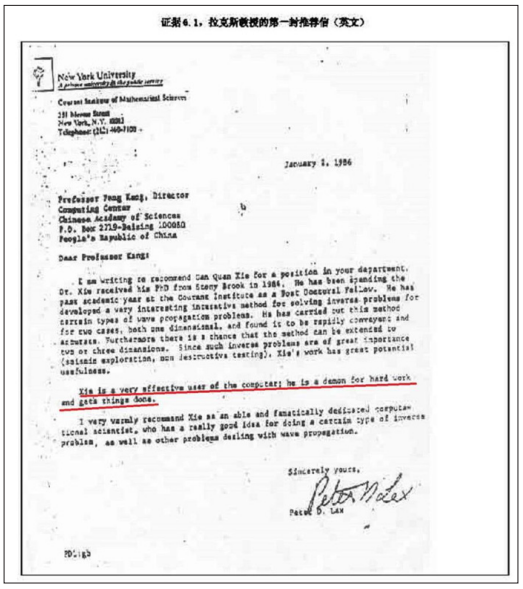


FIG. 3: (color online) A novel double layer cloak surround space shuttle model to prevent detection has been discovered in GILD EM inversion in 2001, which was published in SEG expand abstract in 2002[] .

Before proposing global socialism and local capitalism, from 1984 to 1986, Xie Ganquan did post doctor research inverse problems under the world-renowned mathematician Peter. D. Lax at the Courant Institute in the United States. Generally speaking, inverse

calculations are not suitable for determinism. Xie Ganquan ingeniously developed an inverse calculation method that is suitable for determinism [11]. On January 14, 1988, Guangming Daily's front-page headline reported that Xie Ganquan's inverse calculations had reached the world's advanced level, attached as is Exhibit 4,5. Lax, surprised, asked Xie, "Where did you get this bizarre idea?" Xie replied, "My idea comes from Chairman Mao." Chairman Mao was the master of inverse calculations [12,13]. Peter. D. Lax was the chief scientist who directly calculated the atomic bombs for the Little Boy explosion in Hiroshima, Japan, on August 6, 1945, and the Fat Man explosion in Nagasaki the following week. Peter. D. Lax called Xie Ganquan a "demon for heavy work." Lax's letter to Feng Kang is attached as is Exhibit 4,5.

Exhibit 4


证据6.1：拉克斯教授的第一封推荐信（英文）

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251 Mercer Street
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Telephone (212) 460-7100

January 5, 1986

Professor Feng Kang, Director
Computing Center
Chinese Academy of Sciences
P.O. Box 2719-Beijing 100080
People's Republic of China

Dear Professor Kang:

I am writing to recommend Gan Quan Xie for a position in your department. Dr. Xie received his PhD from Stony Brook in 1984. He has been spending the past academic year at the Courant Institute as a Post Doctoral Fellow. He has developed a very interesting iterative method for solving inverse problems for certain types of wave propagation problems. His has carried out this method for two cases, both one dimensional, and found it to be rapidly convergent and accurate. Furthermore there is a chance that the method can be extended to two or three dimensions. Since such inverse problems are of great importance (seismic exploration, non destructive testing), Xie's work has great potential usefulness.

Xie is a very effective user of the computer; he is a demon for hard work and gets things done.

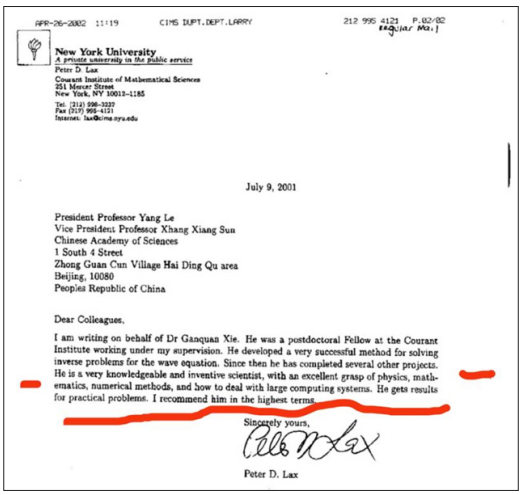
I very warmly recommend Xie as an able and fanatically dedicated computational scientist, who has a really good idea for doing a certain type of inverse problem, as well as other problems dealing with wave propagation.

Sincerely yours,

Peter D. Lax

PDL:gb

Exhibit 5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July 9, 2001

President Professor Yang Le
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Chinese Academy of Sciences
1 South 4 Street
Zhong Guan Cun Village Hai Ding Qu area
Beijing, 10080
Peoples Republic of China

Dear Colleagues,

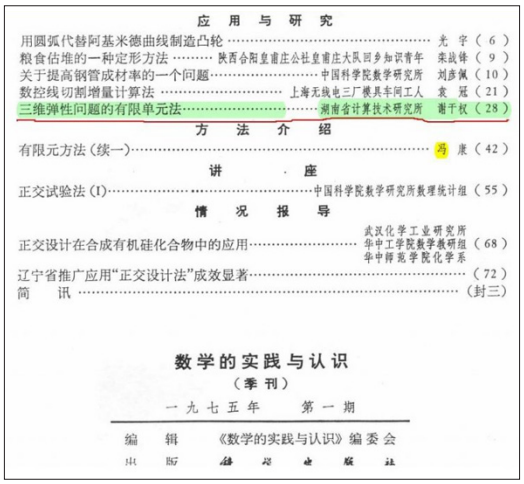
I am writing on behalf of Dr Ganquan Xie. He was a postdoctoral Fellow at the Courant Institute working under my supervision. He developed a very successful method for solving inverse problems for the wave equation. Since then he has completed several other projects. He is a very knowledgeable and inventive scientist, with an excellent grasp of physics, mathematics, numerical methods, and how to deal with large computing systems. He gets results for practical problems. I recommend him in the highest terms.

Sincerely yours,

Peter D. Lax

In 1967, Xie Ganquan participated in the construction of the Chairman Mao statue in Dongfanghong Square at Hunan University. Professor He Zifan, photo attached as is Exhibit 5. who currently lives in Room 1802, Unit 1, Building C7, Liancheng International City, Wangcheng District (Tel. 15367812604), worked alongside Xie Ganquan. Xie Ganquan observed that the statue of Chairman Mao was cast in pieces, with the abdomen, in particular, being constructed from four large pieces. Xie Ganquan was inspired. From 1970 to 1972, Xie Ganquan and Li Jianhua created and developed China's first three-dimensional finite element method, pioneering successful dam calculations and publishing paper. Their three-dimensional finite element method and application software marked a milestone in Chinese engineering calculations. Chairman Mao called for more dam construction and hydroelectric power, and Xie Ganquan and Li Jianhua toiled day and night on dam calculations. In March 1973, Xie Ganquan, Li Jianhua in Hunan Computer technology institute and Wang Xianru and Gu Yinghua of the Yellow River Conservancy Commission successfully calculated the new Yugong hyperbolic arch dam on the Tieshan River in Henan Province using the nation's first three-dimensional finite element application software developed by Xie Ganquan and Li Jianhua. Xie Ganquan worked for four days and three nights without sleep. When printing the results, Wang Xianru and Gu Yinghua compared their experimental data from plaster models with the on-site calculations. The calculated maximum displacement behind the crown was 3.99999 cm, while the experimental result was 4 cm. The calculated results for dozens of other locations were very close to the experimental results. We succeeded. We used three-dimensional finite element methods to calculate all large dams and underground projects across China, saving the country over two billion yuan in construction funds. We were the first internationally to discover the superconvergence of three-dimensional finite elements. Our results were reviewed by Professor Feng Kang of the Academy of Sciences and published in the Mathematical Practice and Cognition in No. 1 of 1975, attached as is Exhibit 6.7,8. We submitted our paper in April 1973, during the Cultural Revolution, when Chairman Mao was still alive, and only Mathematical Practice and Cognition was available for computational research [16]. In 1981, our three-dimensional finite element method won a National Science Conference Award. Secretary and Chairman Hua Guofeng met with us. Professor Feng Kang's high praise is attached, as is Exhibit 9,10,11,12,11. At the time, there were no bonuses, and our monthly salary was only 43 yuan. We love Chairman Mao and the Communist Party, and today we must uphold overall socialism and a partially market-based capital economy. Under the banner of Chinese socialism with Chinese characteristics, as advocated by President Xi Jinping, we strive to improve production, improve our lives, improve our health, and promote science. For the rejuvenation of the Chinese nation, we forge ahead, and we have ideals.

Exhibit 6


应 用 与 研 究

用圆弧代替阿基米德曲线制造凸轮 …… 光 宇（6）
粮食估堆的一种定形方法 …… 陕西合阳皇甫庄公社皇甫庄大队回乡知识青年 宋战锋（9）
关于提高钢管成材率的一个问题 …… 中国科学院数学研究所 刘彦佩（10）
数控线切割增量计算法 …… 上海无线电三厂模具车间工人 袁 冠（21）
三维弹性问题的有限单元法 …… 湖南省计算技术研究所 曹千权（28）

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辽宁省推广应用"正交设计法"成效显著 ……（72）
简 讯 ……（封三）

数学的实践与认识
（季刊）
一九七五年 第一期
编 辑 《数学的实践与认识》编委会
出 版 科 学 出 版 社

Exhibit 7

三维弹性问题的有限单元法*

湖南省计算技术研究所　谢干权

三维弹性问题的有限单元法，是一种适用于计算机上求解三维弹性物体内应力及变位的方法。资料[1]已就N维情况（包括$N = 3$）给出了这种方法的能行性及可靠性的证明与启示。通过计算实践，我们感到合理地选择基本单元和逼近函数，是这个方法在中小型计算机上实现的关键。我们选用任意六面体（其侧面可为曲面）单元及高阶逼近函数。这在节省存储，提高程序的灵活性、适用性方面有一定的好处。所编通用程序于一九七二年十二月中旬在本所国产小型计算机上通过，并计算了两道例题。一九七三年为贵州、黄河水利委员会及本省的水利工程中的双曲薄拱坝进行了应力计算。使用单位认为成果合理，数值上与模型试验基本符合。

3. 变分方程

$$I(u, v, w) = \frac{1}{2}\iiint_G [2\mu(u_x^2 + v_y^2 + w_z^2) + \lambda(u_x + v_y + w_z)^2 + \mu(u_y + v_x)^2 + \mu(w_y + v_z)^2 + \mu(u_z + w_x)^2]d\Omega + \iiint_G (f_1u + f_2v + f_3w)d\Omega - \iint_S (\bar{X}u + \bar{Y}v + \bar{Z}w)ds = \min \quad (1.30)$$

其中，x, y, z 为坐标。u, v, w；f_1, f_2, f_3；$\bar{X}, \bar{Y}, \bar{Z}$ 等分别为物体沿坐标轴方向的变

* 1973 年 4 月 3 日收到，1974 年 9 月 9 日收到修改稿。

· 28 ·

Exhibit 8

这是国际有限元专家Kriek教授论文的一页，krizek 教授写道：在等参三维块单元高斯点的超收敛已经由谢（谢干权）在1975年的论文【69】数值地观察到了。Krizek 还写Zlamal 于1978年给出了三维有限元超收敛的首先理论证明。这是铁的事实证明国际有限元专家承认谢干权于1975年在国际上最早发现了三维有限元的超收敛。

Superconvergence results mentioned in this section require some regular structure of the meshes used (like in Sections 2 and 3). This is specified in the references cited in the text.

The first superconvergence result for $d = 3$ goes back to 1978 when Zlámal in [73] proved higher order convergence of the gradient at Gaussian points of a three-dimensional isoparametric quadratic element of the Serendipity family having 20 degrees of freedom defined on incomplete quartic polynomials. The degrees of freedom correspond to vertices and midpoints of edges. Superconvergence at the Gaussian points of isoparametric block elements was numerically observed already in 1975 by Xie [69] for a linear elasticity problem. Similar results for problem (1) solved by trilinear, triquadratic, tricubic,. . . elements were later derived by Chen in [12] (see also Chen and Huang [14, p. 278]) by means of the orthogonal expansion method. In particular, sampling at centroids for trilinear elements leads to $\mathcal{O}(h^2)$-superconvergence of the gradient.

Exhibit 9

第　　页

Exhibit 7

29.1，世界著名说学家，中国计算数学创始人冯康教授对谢干权在国内外科学研究成就的高度评价。彭求实抄走谢干权的科学大会奖状，博士证书，研究员证书，博士论文，三维有限元软件等珍贵的学术证书和唯一的长江三峡地质断层胶卷等极其重要的资料，抹杀谢干权的国内外科学成就。冯康教授的信证实谢干权荣获全国科学大会奖和获得美国博士和博士后，冯康教授的信就是对彭求实犯罪的揭露和控诉。

冯康教授的第二封推荐信（第一页）

中国科学院计算中心公用笺

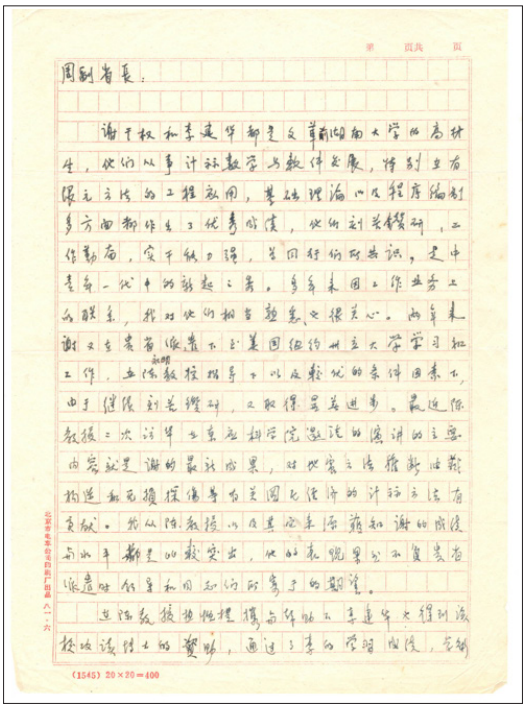
29.1，世界著名说学家，中国计算数学创始人冯康教授对谢干权在国内外科学研究成就的高度评价。彭求实抄走谢干权的科学大会奖状，博士证书，研究员证书，博士论文，三维有限元软件等珍贵的学术证书和唯一的长江三峡地质断层胶卷等极其重要的资料，抹杀谢干权的国内外科学成就。冯康教授的信证实谢干权荣获全国科学大会奖和获得美国博士和博士后，冯康教授的信就是对彭求实犯罪的揭露和控诉。

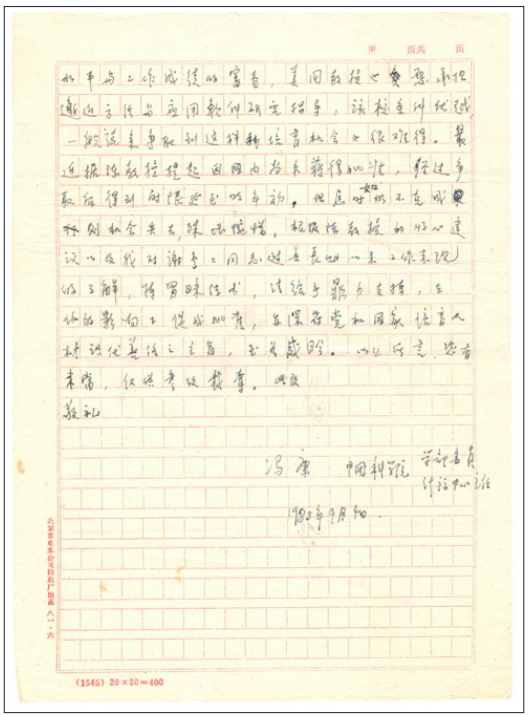
证据 11

冯康教授的第二封推荐信（第二页）

中国科学院计算中心公用笺

Exhibit 11





We introduced the concepts of positive space and negative time, originally in our previous works arXiv:1706.10147, arXiv:1612.02857 and Proposed in arXiv:1005.3999, this paper is used to design G-sphere and GLHUA cloaks with a relative refractive index greater than unity [7-9]. These cloaks utilize a transformation from positive to negative space, enabling the material to absorb an incoming wave while simultaneously generating a new outgoing wave without scattering or time delay. GLHUA cloaks exhibit two separate wavefronts that propagate discontinuously. Simulations of a GLHUA sphere (2 m diameter, 7.49481125*10+7 Hz frequency, basic permittivity and basic permeability) demonstrate perfect cloaking without exceeding the speed of light. Pendry cloak (2006, , Science 312, 1125907) has infinite speed and superluminal fundamental problem. Ulf wrote in (Science 323, 110) and (2001) that Pendry cloak is impractical [4,14,15]. The uniqueness of our work is that negative space provides a new theoretical basis for practical perfect invisible cloaking, which has not been found in previous studies. After a lull in invisibility cloak research after 2011, our advances have revitalized the field, enabling its application within the "superscience" paradigm for stealth technology and space exploration, including the MARS mission. Our GLHUA perfect invisibility cloak overcomes the fundamental problems of Pendry's infinite speed and superluminal speed, which made the Pendry cloak unattainable. Our GLHUA perfect invisibility cloak can be fabricated from ordinary materials with a finite refractive index greater than one. The Pendry cloak and the Ulf cloak were published in Science. The Ulf cloak criticized the fundamental problems of the Pendry cloak. Once published, our paper will revitalize and advance the field of stealth science. We dedicate this paper to our beloved mentor, P.D. Lax.

Exhibit 12

Introduction

Like in the situation where there was no previous imaginary number i =√(-1) , we cannot solve equation $x^2+1=0$.

What happens, if science did not accept imaginary number i=√(-1) ?

The same thing is happening: Invisible science problems cannot be solved if science does not accept "Positive Space and Negative Space".

We ask question : in polar coordinates of a two-dimensional plane, (ρ,θ),ρ≥0, is a point in the plane; for the same θ, where is (-ρ,θ) ? This question can interest students from middle school to university. This topic concerns professors and scientists at all levels. In this paper, we propose positive space and negative space and invisible science .

Let (x,y,z) be a point in 3D space, $r = \pm\sqrt{(x^2+y^2+z^2)}$, the $r =+\sqrt{(x^2+y^2+z^2)}$, used only as the radius of the point (r, θ, φ) of the 3D spherical coordinates in sciences previously. In 3D spherical coordinate, the set of the points (r, θ, φ) with positive radial

coordinate, r ≥0, 0≤r≤+∞ , called to be 3D positive space, the conventional three-dimensional space we inhabit. For same (θ, φ) of the points in the positive space, no point (-r, θ, φ) exists in conventional three-dimensional positive space. Thus, we propose a negative space, we now select the

$r=-\sqrt{(x^2+y^2+z^2)}$, a new negative space is defined as the set of these points (- r, θ, φ). In 3D spherical coordinate, the set of the points, (- r, θ, φ),with negative radial coordinate, -∞ <r≤-0, is defined to be the 3D negative space. The origin +0 of positive space can be an arbitrary location. For a given 3D sphere coordinate in positive space. The point, (r, θ, φ), in the positive space and the point, (-r, θ, φ), in negative space are defined as corresponding points with the same latitude and longitude (θ, φ). The origin +0 of the positive space and the origin -0 of the negative space are corresponding points, but distinct points. The 3D negative space is corresponding space of the 3D positive space.

By 3D geometry knowledge, every sphere surface is a 2D double-sided curve surface or bilateral curve surface. The positive space lies on the outside lateral of the spherical surface, with the normal directed outward and with a positive radial coordinate ; the radius from the positive origin to the point is positive. The negative space lies on the inside lateral of the spherical surface, with the normal directed inward and with negative radial coordinate, the radius from the negative origin to the point is negative. The 3D positive space and negative spaces are not connected. The negative space and the positive space have no intersection. The negative space and the positive space are Euclid geometry space, Gravity, acoustic, elastic and electromagnetic equations and science hold true in positive space and negative Space.

Positive space is visible as a whole but can also be locally invisible. For example, GLLH and GLHUA can be made completely invisible cloaks. Negative space is global invisible but can also be local visible, such as in a mirage. We have proved that Maxwell's electromagnetic wave equations, acoustic wave equations, elastic wave equations, heat conduction equations, Boltzmann equations, quantum mechanics Schrödinger equations, fluid mechanics equations, etc., which are valid in three-dimensional positive space, are valid in negative space. All sciences that are valid in positive space are valid in negative space. The Goldbach conjecture is an equivalent conjecture in positive space and negative space. In Chen Jingrun's representation, the first option is valid in both positive space and negative space. However, if the representation of option 2 in negative space is returned to positive space, an obvious contradiction will appear: a large even number is equal to a prime number (smaller than it). We have proposed a new clue and approach to prove the Goldbach conjecture based on Chen Jingrun's theorem and negative space [1,17]. From positive space and negative space, we discovered the three-dimensional electromagnetic invisible GLHUA sphere [1].

No funding supports this paper and related research.

All date are owned by this paper

Acknowledged
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