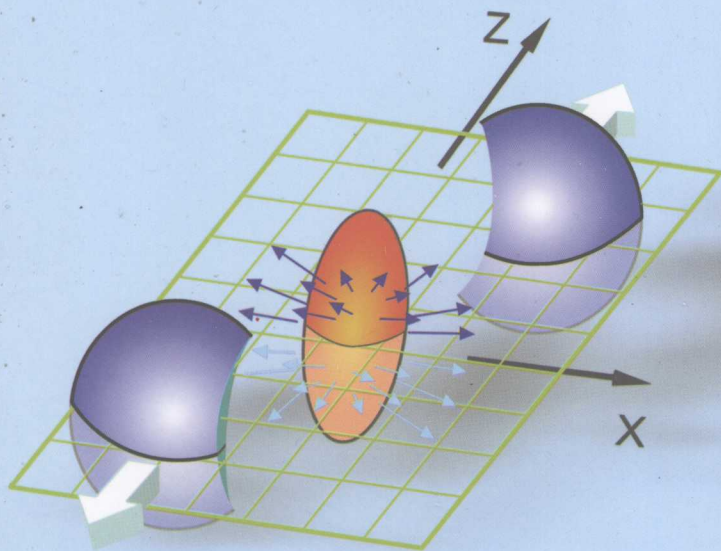


◎茅广军论文选集

相对论多体输运理论研究



主
编

卓益忠
李祝霞
赵恩广
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中国科学技术出版社



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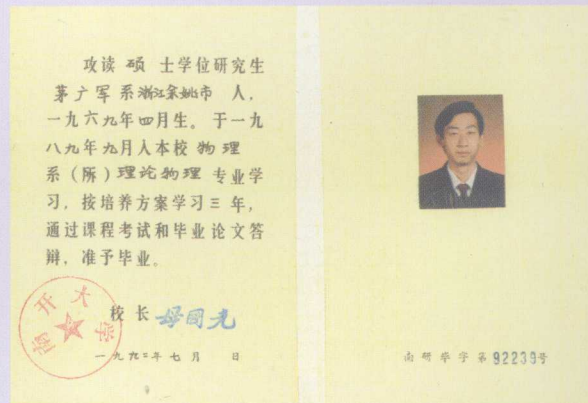
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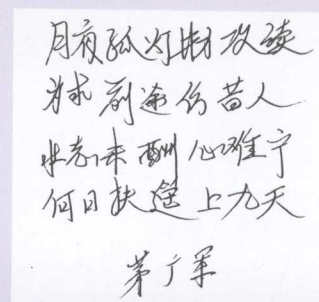
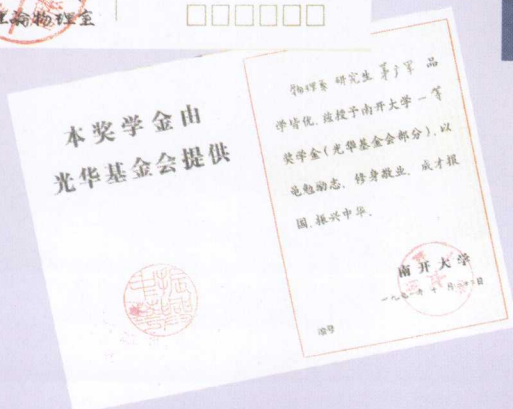
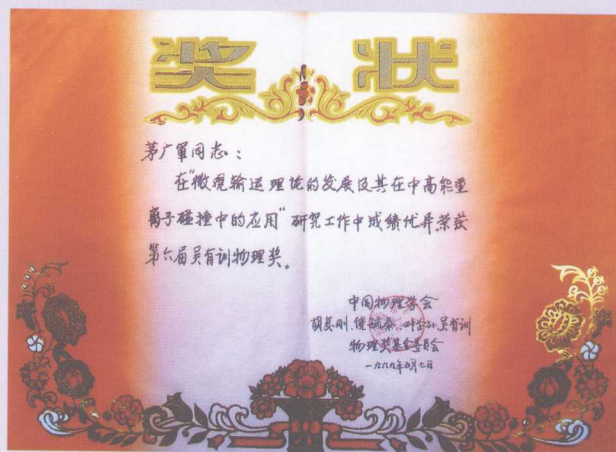
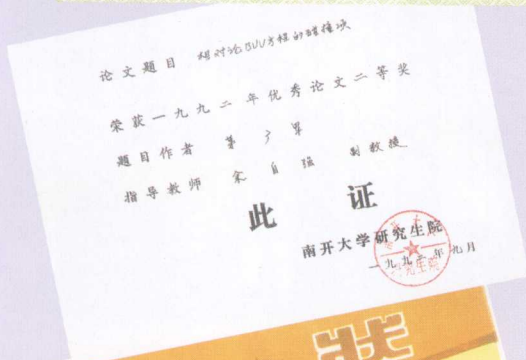
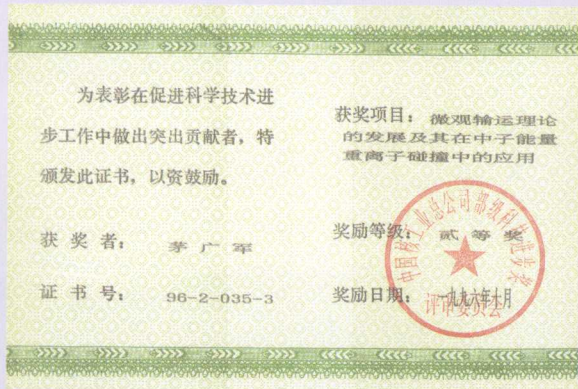
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茅广军研究员(1969-2005)





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2005年5月摄于南京钟山宾馆,第四排左三为茅广军



高能物理研究所茅广军研究员作学术报告(2002年5月摄于南京)



第五排右一为茅广军



后排左起第四为茅广军



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茅广军与导师卓益忠研究员合影



茅广军与导师吴锡桢(左一)、李祝霞(左二)研究员合影



茅广军(左三)与导师赵恩广研究员(右三)、欧阳钟灿院士(右一)等合影(1996)



茅广军(后排左六)2004年参加第十届全国中高能核物理大会



茅广军与陆埏院士(中)、白希祥(右一)教授合影



茅广军(左一)与 Talmi 教授、刘玉鑫教授合影



茅广军(左一)在理论物理所与国内学者合影



茅广军(左)与比利时朋友 Godefroid 合影



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茅广军(左四)与德国洪堡的同学合影



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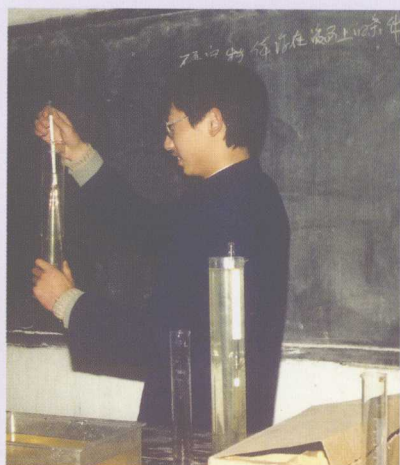
茅广军(右)与师弟顾建中(左)合影



茅广军



大学岁月



研究生岁月



在德国柏林大学洪堡像前留念



在日本



在宁波



与同学孙曙民(右)合影



去德国留学前在机场与父母合影

序 言

茅广军生于1969年4月,浙江余姚人。因他出生时,其父亲是驻广东的海军战士,故取名为广军。广军自幼聪明,5岁上学,1989年20岁的广军就业于宁波师范学院物理系,获理学学士学位。1989年考入南开大学物理系师从余自强教授攻读硕士学位。当时卓益忠正和余自强教授合作开展相对论重离子碰撞理论研究,广军跟着我们系统地学习了相对论量子微观输运理论。他在南开打下了坚实的理论物理功底,是南开大学出类拔萃的学生。1992年他在南开大学物理系硕士研究生毕业,获理学硕士学位。同年考入中国原子能科学研究院,随卓益忠和李祝霞攻读博士学位。他很快进入相对论量子微观输运理论的研究前沿,并在该领域发表了多篇有影响的文章,其中有的至今还在被国内外同行引用。1995年他在原子能院博士研究生毕业,获理学博士学位。他是原子能院1995届优秀的博士毕业生。1996年他和李祝霞、卓益忠一起获得了核工业部科技进步二等奖。

获博士学位后,他于1995~1996年在中国科学院理论物理研究所做博士后,合作导师是赵恩广。后来,他先后去德国法兰克福大学(洪堡学者,1997~1999)和日本东海原子力研究所(SAT研究员,1999~2000)从事理论核物理研究工作。在相对论量子微观输运理论领域做了许多重要工作。他把我们共同发展起来的理论推进了一大步,并把在这一理论框架内能够解决的问题,都解决得十分完善与彻底。这些工作被高度评价和广泛引用。其中,Prog. part. Nucl. Phys. 41 (1998) 225~370一文被他人引用200多次。他是中科院理论物理研究所最优秀的博士后之一。在德国法兰克福他在学术上非常活跃,受到了W. Greiner, H. Stoecker等教授的高度赞赏。Greiner教授还亲自对卓益忠说过:“欢迎你们多送像茅广军这样的人到我们这里来。”他以自己的勤奋、才华和成就,在国际原子核物理学界的影响与日俱增。1999年他和李祝霞以及卓益忠荣获吴有训物理学奖。应当说,如果没有他的贡献,是不可能得到上述两个奖的。

完成博士后研究后,2001年他被中国科学院高能物理研究所引进,并被聘为研究员。广军是勇于探索的人。进入高能所后,他努力把自己的研究领域拓宽到了超核和真空反粒子能谱以及高能核天体物理、中子星、脉冲星。他在这些新的研究领域,做了顽强的拼搏,取得了不少研究成果,发表了多篇学术论文。此外,到高能所后广军还完成了一部专著“Relativistic Microscopic Quantum Transport Equation”。该书是由美国Nova Science出版社主动约稿,今年即将出版发行。在这本书中他系统地总结了多年来与其合作者在这一研究领域里的成果,这也是需要他付出很多时间与精力的。2005年8月,广军由高能物理所调入北京航空航天大学应用物理系工作。同年9月不幸去世。

广军单纯善良,人缘很好。他做事很认真,非常负责任。在科研方面,他对自己总是严格要求,敢于创新,敢于挑战难题。他喜欢在一个课题做完整后再写文章,一个问题只写一篇完整文章。在攻读博士学位期间,他就在美国物理评论上发表过超过20页的文章。以后,他写过更长的文章。他是一个老老实实做学问的人,是我国核物理学界一位不可多得优秀年轻研究人才。广军英年早逝,让我们悲痛万分。《茅广军论文集》的出版是众望所归。从这本文集中,读者可以感受到他严谨的治学态度。但愿这本文集也能安慰广军的亲人。

单益忠
李锐霞
赵恩广

2006年6月于北京

Preface

Mao Guangjun was born in April of 1969 in Yuyiao County, Zhejiang Province. His father was at service in the Navy in Guangdong Province when he was born, so he was named Guangjun (In Chinese, Guang means Guangdong Province, Jun means army). He was very clever since he was a child. He went to school at five, and graduated from the Physics Department of Ningbo Normal University at merely twenty, earned bachelor's degree. In the same year he was enrolled in the Physics Department of Nankai University to study his master's degree course under the guidance of Professor Yu Ziqiang. At that time Professor Zhuo Yizhong was collaborating with Professor Yu Ziqiang in research on relativistic heavy-ion collision theory. Mao Guangjun studied relativistic microscopic quantum transport theory systematically. He laid solid foundation of theoretical physics in Nankai University, and became one of the best students. He got his master degree of science in 1992. In the same year he entered China Institute of Atomic Energy through examination to do his doctor's degree with Professor Zhuo Yizhong and Professor Li Zhuxia. He soon began the frontier research on relativistic microscopic quantum transport theory, and published many influential papers in that field. Some of his papers are still quoted by the professionals both at home and abroad. In 1995, he graduated as an outstanding doctor graduate and obtained the doctor degree of science. Just in 1996, he and Professor Li Zhuxia and Zhuo Yizhong were together awarded the second grade prize for science and technology progress by the Ministry of Nuclear Industry.

After he got his doctor degree, he did his post-doctor study in the Institute of Theoretical Physics, Chinese Academy of Sciences, in 1995 ~ 1996. His collaborating teacher was Professor Zhao Enguang. Later, He first went to Frankfurt University, Germany (Wilhelm von Humboldt scholar, 1997 ~ 1999) and then Tokai Nuclear Energy Institute, Japan (SAT research fellow, 1999 ~ 2000) to do his research on theoretical physics. During his stay in Germany, he was very active in academic activities and received high praises from some professors there, such as Professor W. Greiner and Professor H. Stoecker. Professor Greiner said to Professor Zhuo Yizhong in person: "We welcome you to send more people like Mao Guangjun here." Mao Guangjun did many important jobs in the field of relativistic microscopic quantum transport theory, pushed the theory, which were developed by us together, a great step forward, and perfectly and thoroughly solved many problems in this theoretical framework. His job was won high praise. His papers were quoted extensively. Among others, Prog. Part. Nucl. Phys. 41(1998), 225 ~ 370 has been quoted more than 200 times. He was one of the best post-doctors in the Institute of Theoretical Physics, Chinese Academy of Sciences. His influence increases daily in the circle of international nuclear physics for his diligent, talent and achievement. In 1999, he and Li Zhuxia and Zhuo Yizhong won Wu Youxun Physics Prize of Chinese Physics Society.

It is reasonable to say that without Mao Guangjun's contribution we would impossibly receive the above two prizes.

After the completion of his post-doctoral research, he was introduced to the Institute of High Energy Physics, Chinese Academy of Sciences, and obtained a position of full professor. Mao Guangjun was brave in exploration. Since he entered the Institute of High Energy Physics, he made every endeavor to broaden his research fields to hyper-nuclei and anti-particle energy spectrum in vacuum, high-energy nuclear astrophysics, neutron star, and pulsars. He worked hard in these new research fields, achieved a lot of results, and published many academic papers. At same time, he also completed a monograph titled Relativistic Microscopic Quantum Transport Equation, which was initially contracted by Nova Science Publishing House, USA, and will be put out this year. In the book he systematically summed up the research results in this field that achieved by him and his colleagues. In August of 2005, he was transferred from the Institute of High Energy Physics to the Department of Applied Physics of Beihang University, and died unfortunately in September of that year.

Mao Guangjun was simple-hearted and on good terms with the people around. He did things conscientiously and with responsibility. In research, he had strict demand for himself, and had the courage to challenge difficult problems and make breakthrough. He liked to write the paper after finishing the whole subject, and only write one comprehensive paper for each problem. While he was doing his doctor's degree, he already published a paper over 20 pages on Physics Review in USA. Later, he wrote some longer papers. He was an honest man in learning, a difficult-to-get outstanding young research talent in the field of nuclear physics in our country. We deeply mourn for his immature death. It is the hope of all of us to publish The Selected Papers of Mao Guangjun. From this book readers may find his rigorous attitude in doing his research. May this book give some comfort to his family.

Zhuo Yizhong

Li Zhuxia

Zhao Enguang

June of 2006 in Beijing

茅广军简历

姓 名: 茅广军

性 别: 男

民 族: 汉

出生年月: 1969 年 4 月

籍 贯: 浙江余姚人

学习简历:

1985.9—1989.7	宁波大学师范学院物理系	学士
1989.9—1992.7	南开大学物理系	硕士
1992.9—1995.7	中国原子能科学研究院	博士

工作经历:

1995.7—1996.10	中国科学院理论物理研究所	博士后
1997.3—1999.6	德国法兰克福大学理论物理研究所	洪堡研究员
1999.7—2000.12	日本原子能研究所	STA 研究员
2001.9—2005.8	中国科学院高能物理研究所	研究员

主要研究领域:

1. 天体物理中的脉冲星、磁化中子星。
2. 有限核中的反核子自由度和量子真空效应,超核和奇异粒子。
3. 非平衡态多体问题,相对论量子微观输运理论,相对论重离子反应。

发表论文情况:

至 2004 年底发表论文总数为 50 余篇,其中国际会议文集 12 篇。被《SCI》收录 24 篇,《EI》收录 11 篇,《中国科学引文数据库》收录 10 篇,专著“Relativistic Microscopic Quantum Transport Equation”将由纽约的 Nova Science Publisher 出版。

获奖情况:

1. 1990 年获南开大学王克昌奖学金二等奖。
2. 1990 年获新加坡世界科学出版社理论物理奖学金二等奖。
3. 1991 年获南开大学光华奖学金一等奖。
4. 1991 年获南开大学物理系程京奖学金。
5. 1992 年获南开大学优秀论文二等奖,论文题目:相对论 BUU 方程的碰撞项。
6. 1996 年获核工业部科技进步二等奖,项目是:微观输运理论的发展及其在中等能量重离子碰撞中的应用。
7. 1999 年获吴有训物理学奖,项目是:微观输运理论的发展及其在中高能重离子碰撞中的应用。

Guangjun Mao(G. Mao)

PERSONAL INFORMATION

Name: Guangjun(first name) Mao(surname)
Sex: Male
Birth date: April 1969
Birth place: Zhejiang, China
Nationality: People's Republic of China

EDUCATION

1985 – 1989 Bachelor of Science
Department of Physics, Ningbo Normal College, Ningbo, Zhejiang Major: Physics
1989 – 1992 Master of Science
Department of Physics, Nankai University, Nankai, Tianjin
Major: Theoretical Physics
Thesis Topic: *Collision Term of Relativistic Boltzmann-Uehling-Uhlenbeck Equation*
1992 – 1995 Doctor of Philosophy
China Institute of Atomic Energy(CIAE)
Major: Theoretical Nuclear Physics
Dissertation Topic: *Self-consistent Relativistic Transport Theory for Heavy-ion Collisions*

PROFESSIONAL EXPERIENCE

7/1995 – 10/1996 Post-Doctor
Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing, P. R. China
3/1997 – 6/1999 Alexander von Humboldt Research Fellow
Institut für Theoretische Physik, J. W. Goethe Universität, Frankfurt am Main, Germany
7/1999 – 12/2000 STA Research Fellow
Advanced Science Research Center, Japan Atomic Energy Research Institute
9/2001 – 8/2005 Professor
Institute of High Energy Physics, Chinese Academy of Sciences, Beijing,