北京大学
PEKING UNIVERSITY

90年的历程

北京大学大气科学学科历史回顾

The Ninety-year Journey

A Brief History of Atmospheric Sciences at Peking University

1929-2019

1929–2019

北京大学大气科学学科历史回顾

序
Forward

自 1929 年成立，北京大学大气科学学科已走过了 90 个春秋的历程。北大大气科学学科的历史不仅记录着中国大气科学的发展历史，也是现代科学在中国发展的一个缩影。

90 年后回望，我们学科的历史场景在中国近代历史变迁的背景中一幕幕浮现出来，并朝我们迎面走来。大气科学在中国的生根发芽并不容易，早期弱小而脆弱，逐渐茁壮和强盛是我们学科发展的真实写照。历经 90 个春秋，离不开创建者们的远见卓识、守望者们的坚持和呵护、耕耘者们的勤奋和努力。

北大大气科学学科的历史大致可分为 3 个阶段。清华和西南联大时期是学科的开创和守望阶段（1929-1951），北大物理系和地球物理系时期是学科的耕耘和蓬勃发展阶段（1952-2000），北大物理学院大气科学系和大气与海洋科学系时期是学科转向教学与科研并重、迈向世界一流的阶段（2001- 至今）。

开创和守望：自古创业百难多，大气科学学科于 1929 年在清华大学地理学系创办时，气象组教员只有黄厦千先生 1 人，1934 年的第一届毕业生也只有李良骐先生 1 人。1934 年，黄厦千先生离职后，教师几乎无以为继，只能借聘北平师范大学的刘衍淮先生和中央研究院气象研究所的涂长望先生兼课。

直到李宪之先生和赵九章先生分别于 1936 年和 1938 年回国任教，大气科学学科才得以持续性地发展。他们的坚持和守望，是大气学科早期延续的关键。大气学科的发展离不开著名物理学家叶企孙先生的高度重视和热情支持，在其任职清华大学物理系主任和理学院院长期间，大力扶持气象学的发展，他对大气科学的支持一直延续北京大学物理系时期。

耕耘和收获：1952 年，清华大学气象系随全国范围的院系调整来到北京大学，成为物理系的气象专业。历经百年战乱的国家百废待兴，国家建设以及国家对气象人才的需求，使得大气科学学科在上世纪 50 年代和 60 年代早期得到了快速发展。部分毕业生留校任教，使教师队伍得以壮大。招生规模也在扩大，仅 1956 级，气象专业就招收了 150 名学生。

由于各学科专业的快速扩展，北大物理系于 1958 年分为三个系：物理系、地球物理系和无线电电子学系。气象专业分为大气物理学和天气动力学两个专业，并与其它几个专业一起组成地球物理系。1958 至 1966 年，大气科学的两个专业不仅学科建设日臻完善，基础和应用研究也日渐成熟。

但 10 年文革，一场浩劫，教学和科研几乎陷入停顿状态。尽管如此，大气科学学科仍做出了巨大努力，服务国家需求。1970-1976 年招收了 5 届工农兵学员，举办了各类培训班。在科研上，为满足国家当时的需求，开展了应用性研究。

1976 年，文革结束，高考恢复，教学和科研逐步恢复正常。地球物理系两个大气科学专业于 1978 年开始招生，逐步建立了本科、硕士、博士培养体系和博士后流动站，系统编写了教材。自 50 年代的科研积累也迎来了收获的季节。1978 年，13 项科研成果获“全国科学大会奖”，80 年代至本世纪初，共获得国家自然科学奖、科技进步奖 15 项。

大气科学学科在这个时期也培养了大批优秀毕业生。在学科历史上走出的 20 位两院院士中，有 13 位是在这个时期培养的。

迈向世界一流：1998 年，在庆祝北大百年校庆之际，国家决定建设世界一流的研究型大学，并启动“985 工程”。北大大气科学学科也自此进入了一个新的发展时期，与国际接轨、建设世界一流的教学和科研并重的大气学科成为新的奋斗目标。

2001 年，北京大学进行院系调整，原地球物理系天气动力学专业和大气物理专业合并成为大气科学系，与天文系和原物理系、技术物理系共同组成物理学院，这是大气科学与物理学的又一次结缘。

2009 年 9 月，为加强气候变化研究和发展海洋科学，物理学院酝酿增设物理海洋专业，并将大气科学系更名为大气与海洋科学系。12 月，北京大学批准成立大气与海洋科学系，并成立“气候与海气实验室”。研究方向从传统的气象学、大气物理学，扩展到大气化学、物理海洋、深时古气候和行星大气。学科的目标是研究大气科学和物理海洋领域最基础、最前沿的科学问题，倡导在独立科研基础上的团队合作。近几年，学科在大气化学、中小尺度天气学、古气候和行星大气领域做出了创新性的成果。

国际交流和合作是学科走向国际一流和培养具有国际视野青年人才的重要保证。近年来，学科大力推动与国际名校的学生交流，与哈佛大学、芝加哥大学、加州理工学院、加州大学洛杉矶分校签订了本科生互访合作协议。2017 年，与哈佛大学地球与行星科学系签订了科研合作协议。

90 年的历史积累和沉淀了丰厚的文化底蕴。从清华的自强不息，到西南联大的刚毅坚卓，再到北大的兼容并包；从北大人的勇于担当、敢为天下先，到物理学院的格物致知，再到大气科学学科的求实创新、追求卓越，这些无不渗透到学科的人才培养理念和科研实践中，并成为我们学科的文化底蕴。

学科的底蕴是通过几代师生们的具体实践形成的。李宪之先生的默默坚守、赵九章和谢义炳先生倡导的以数理科学为基础以及仇永炎、王绍武和张玉玲等先辈们的淡泊明志，为学生们树立了不朽的榜样。学生们没有辜负老师们的期望，从早期的毕业生谢义炳、郭晓岚、叶笃正和顾震潮等，到现在活跃在海内外科研、教学、管理等领域的校友们，他们都是北大大气科学学科文化底蕴的贡献者。

展望未来，北大大气科学学现在站在新的历史起点上，培养优秀人才、做出创新性的科研成果、服务国家需求、为世界大气科学事业做出贡献是我们新的奋斗目标。我们将牢记 90 年历史的重托，继往开来、勇攀高峰。

《90 年的历程》纪念册主要由刘美景收集整理、胡永云增补校对，我系师生和校友提供了各个历史时期的珍贵图片和素材。张霖、傅宗玫两位老师及部分研究生（周密、谭海月、卢骁、刘泽慧、陈优帆等）负责英文翻译，在此一并表示感谢！由于时间仓促，对历史材料的收集肯定很不全面，对材料的把握和论证也肯定有不确切之处，欢迎大家批评指正，也非常欢迎大家提供更多的史料，以便我们在将来的修订中补充和修正。

北京大学物理学院大气与海洋科学系系主任

胡永云

2019 年 5 月 10 日

Forward

The Discipline of Atmospheric Sciences at Peking University, established in 1929, has ninety years of prestigious history and academic traditions. The history of atmospheric sciences at Peking University was not only a record of the advancement of atmospheric sciences in China, it also depicted the advancement of modern sciences in China.

Looking back, we are deeply moved by the development of our discipline and its ties to the tumultuous events in modern Chinese history. The growth of atmospheric sciences in China has not been easy - from the destitute early days to the prosperous present. We owe our present prosperity to the foresights of the early visionaries, the tenacity of the persistent caretakers, and the hard work of the restless cultivators.

The Discipline of Atmospheric Sciences at Peking University has gone through three important periods. The first is the period of creation and perseverance (1929-1951), during which the Discipline was first established at Tsinghua University and then became part of National Southwestern Associated University during World War II. The second is the period of cultivation and maturement (1952-2000), during which the Discipline grew initially as a meteorology program in the Physics Department at Peking University and then as the atmospheric physics and dynamical meteorology programs in the Geophysics Department. Since 2001, the Department of Atmospheric and Oceanic Sciences in the School of Physics at Peking University has emphasized both teaching and research, with the goal of becoming a world-class scientific institution.

Creation and perseverance (1929 – 1951): The Atmospheric Science Discipline was created within the Geography Department at Tsinghua University in 1929. At the time, the faculty consisted of only one member, Professor Xiaqian Huang, and the first graduate class in 1934 consisted of only one student, Mr. Liangqi Li. The Discipline almost disintegrated after the departure of Professor Xiaqian Huang in 1934 and relied on Professor Yen-huai Liu (Peking Normal University) and Professor Changwang Tu (Institute of Meteorology, Academia Sinica), who taught classes part-time.

Professors Sjan-Zsi Li and Jeou-jang Jaw returned to China in 1936 and 1938, respectively, and they reinvigorated the Discipline. Their perseverance and caretaking in the time of great turbulence in China were the key to the continuation of the Discipline. The advancement of Atmospheric Science was also indebted to the renowned physicist Professor Chi-Sun Yeh, who strongly supported the advancement of meteorological science during his tenures as the Chair of the Physics Department and as the Dean of the School of Sciences at Tsinghua University. Professor Yeh not only advised Jeou-jang Jaw, then a graduate from the Physics Department, to study meteorology in Germany, but also taught the course “Physics of sounds, lights, and electricity in the Atmosphere” to the meteorology majors. He continued to support the development of atmospheric sciences well after the Discipline moved to Peking University.

Cultivation and maturement (1952 – 2000): In 1952, the Meteorology Department at Tsinghua University was

reestablished as the Meteorology Program in the Physics Department at Peking University, due to the higher education reformation by following the former Soviet Union. At the time, after almost a century of war and turmoil in China, the reconstruction of the nation led to a large demand for talents in all aspects of science and engineering, including those in meteorology. This spurred a rapid development of atmospheric sciences in the 1950s and 1960s. Many of our graduates stayed on to teach and eventually constituted a strong faculty. The student body also grew significantly. The Meteorology Program recruited 150 students in 1956 alone.

Due to the rapid growth in all of its disciplines, the Physics Department at Peking University divided itself into three departments in 1958: the Physics Department, the Geophysics Department, and the Radio and Electronics Department. The Geophysics Department consisted of programs in atmospheric physics, meteorological dynamics, geophysics, space physics, and astrophysics. During 1958 to 1966, the two programs in atmospheric sciences grew rapidly in disciplinary teaching as well as in basic and applied research.

The calamity of the Cultural Revolution grinded scientific teaching and research across China almost to a complete halt for ten years. However, even during this time of extreme difficulty, the Discipline still strived to serve the needs of our country. Between 1970-1976, the Discipline recruited five classes of students and put together practical training programs in weather modification, short- and mid-term weather forecasts, numerical weather forecast, severe weather analyses and forecasts, and satellite imagery analyses. The Discipline also developed its applied research to better serve the needs of the Nation at the time.

The Cultural Revolution ended in 1976. College entrance examinations were soon reinstated, and scientific teaching and research in China gradually returned to normality. The two atmospheric science programs in the Geophysics Department resumed student recruitment in 1978, gradually developed complete curricula at the undergraduate, Master's, and PhD levels and established posts for postdoctoral researchers. The perseverance of atmospheric scientists since the 1950s also brought fruition. Thirteen scientific advancements in atmospheric sciences won the "National Science Awards" in 1978. Between the 1980s and the early 2000s, the Discipline won a total of fifteen "National Natural Science Award" and "National Science and Technology Advancement Awards".

The Discipline also educated many exceptional talents in atmospheric sciences during this period. Of all of the twenty alumni Academicians of the Chinese Academy of Sciences, thirteen were educated during this period.

Becoming world-class (2001 – present): In 1998, as Peking University celebrated its centennial, the Chinese government resolved to develop its world-class research-oriented universities and began the "985 Program". The Discipline of Atmospheric Sciences at Peking University thus entered a brand-new period of development by connecting with the international community and striving for world-class in teaching and research.

Peking University reorganized its disciplines in 2001. The meteorological dynamics and atmospheric physics programs in the Geophysics Department were combined into the Department of Atmospheric Sciences. Along with the Departments of Physics, Technological Physics, and Astronomy, the four departments formed the School of Physics.

In September 2009, with the goal of further developing research in climate change and oceanic sciences, the

Department of Atmospheric Sciences was renamed the Department of Atmospheric and Oceanic Sciences. The Laboratory for Climate and Ocean-Atmosphere Studies was also established in December 2009. The research directions of the Department were greatly expanded, from the more traditional areas of meteorology and atmospheric physics, to the newer frontiers of atmospheric chemistry, physical oceanography, deep-time paleoclimatology, and planetary atmospheres. The goal of the Discipline is to advance the fundamental understanding of the cutting-edge questions in atmospheric and oceanic sciences. We promote collaboration on the basis of solid individual research. In this spirit, we have made many important and innovative progresses in the areas of atmospheric chemistry, small- and meso-scale meteorology, paleoclimate, and planetary atmospheres in recent years.

Connecting our researchers and students with the international community is one of the critical aspects of becoming world-class and educating young talents with global perspectives. In recent years, we connected and signed undergraduate exchanged agreements with world-renowned institutions, such as Harvard University, University of Chicago, California Institute of Technology, and UCLA. The Department signed a collaborative research agreement with the Department of Earth and Planetary Sciences of Harvard University in 2017.

Our ninety years of history shall be cherished. The unpretentious, persevering, and innovate spirits of our forerunners shall be learned and shall continue to guide our education and research. We think of the tenacity of Professor Sjan-Zsi Li, the relentless advocacy of math and physics of Professors Jeou-jang Jaw and Yiping Hsieh, and the quiet scholarships of Professors Yongyan Qiu, Shaowu Wang, and Yuling Zhang. All of these figures are role models for our students. And those students have not disappointed. From our early graduates, such as Yiping Hsieh, Hsiao-Lan Kuo, Tu-Cheng Yeh, and Zhenchao Gu, to the great number of alumni currently active in research, education, and management both in China and abroad, all have exemplified and contributed to our prestigious academic heritage.

The Discipline of Atmospheric Sciences at Peking University is now standing at the beginning of its new history. Looking into the future, we endeavor to educate great talents, conduct innovative research, serve the needs of our Nation, and contribute to the advancements of atmospheric sciences. We will act, instead of talk, and we will be true to our heritage as we scale new heights.

The Ninety-Year Journey is a commemorative collection of documents and photographs from the history of the Discipline of Atmospheric Sciences at Peking University edited by Ms. Meijing Liu and myself. These materials were contributions from a large number of faculty, students, and alumni, to whom we are extremely grateful. Professors Lin Zhang and Tzung-May Fu and a number of graduate students (Mi Zhou, Haiyue Tan, Xiao Lu, Zehui Liu, Youfan Chen) helped translate the materials into English. Due to constraints in time, the collection of historic materials is far from complete and the interpretation of some materials may be in error. We welcome corrections and suggestions, as well as contributions of more historic materials, so we may incorporate them in future editions.

Yongyun Hu

Chair, Department of Atmospheric and Oceanic Sciences, School of Physics, Peking University

May 10th, 2019

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历史脉络
History

1929年

清华大学地理学系气象组
Meteorological program,
Dept. of Geography, Tsinghua
University

1937年

国立长沙临时大学地质地理气象学系
Dept. of Geology, Geography and
Meteorology, National Changsha
temporary University

1938年

国立西南联合大学地质地理气
象学系
Dept. of Geology, Geography
and Meteorology, National
Southwestern Associated
University

1946年

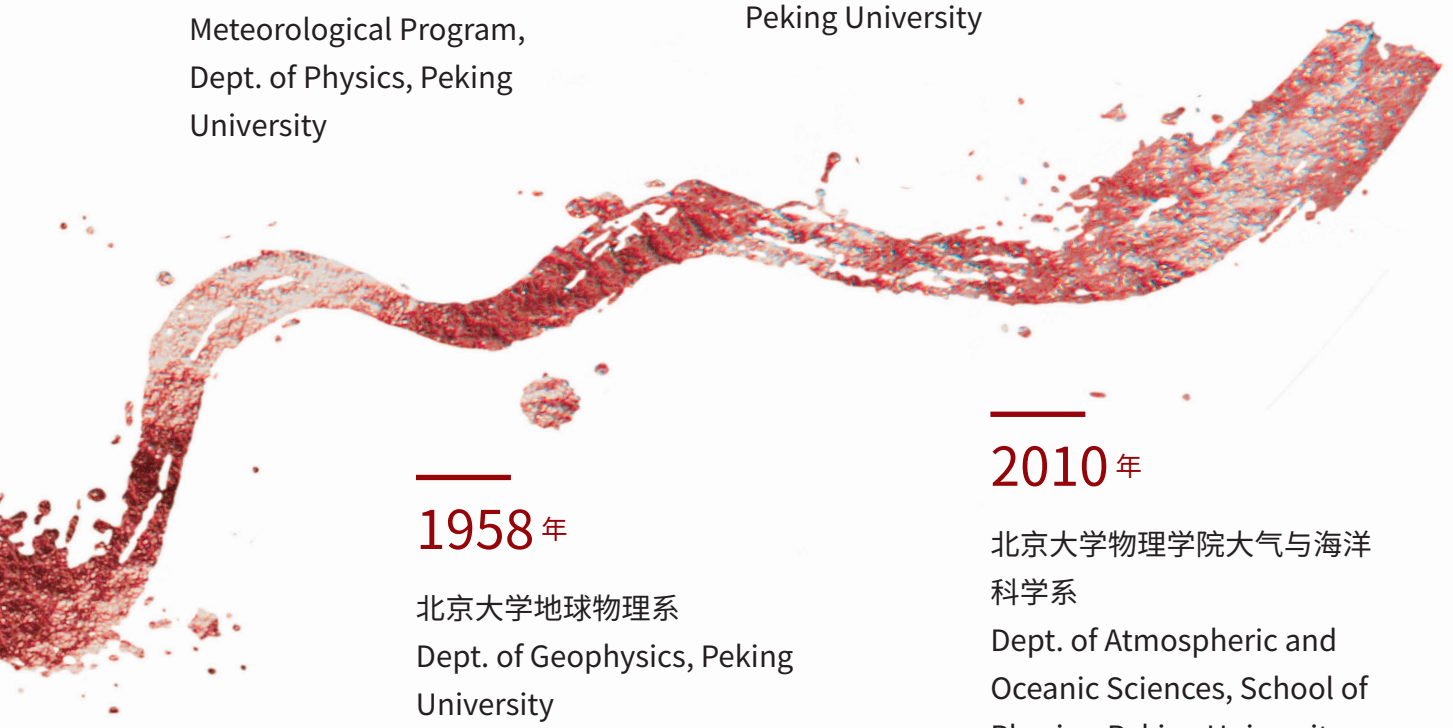
清华大学气象学系
Dept. of Meteorology,
Tsinghua University

1952年

北京大学物理系气象专业
Meteorological Program, Dept. of Physics, Peking University

2001年

北京大学物理学院大气科学系
Dept. of Atmospheric Sciences, School of Physics, Peking University



1958年

北京大学地球物理系
Dept. of Geophysics, Peking University

2010年

北京大学物理学院大气与海洋科学系
Dept. of Atmospheric and Oceanic Sciences, School of Physics, Peking University

启 蒙
Origin

启蒙
Origin

蒋丙然 Bingran Jiang (1883-1966)

1917 年， 北京大学第一次跟大气科学结缘。蒋丙然先生于 1912 年获比利时农业气象学博士学位后回国，并自 1917 年开始在北京大学讲授农业气象学，这是在我国首次系统地开展现代气象学教学。他编写了教材《理论气象学》（1921 年版），该书是我国最早的气象学教科书。

In 1917, Peking University formed its initial ties with the Discipline of Atmospheric Sciences. Dr. Bingran Jiang returned to China after receiving his Ph.D. degree in agricultural meteorology in Belgium in 1912. He started to teach agricultural meteorology at Peking University in 1917. This was the first systematic education of modern meteorology in China. He wrote the textbook “Theoretical Meteorology” (1921 Edition), which was the earliest textbook of meteorology in China.

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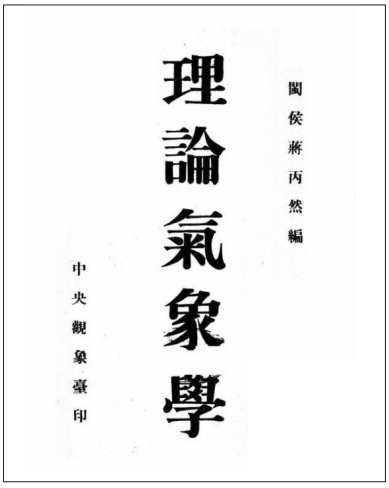
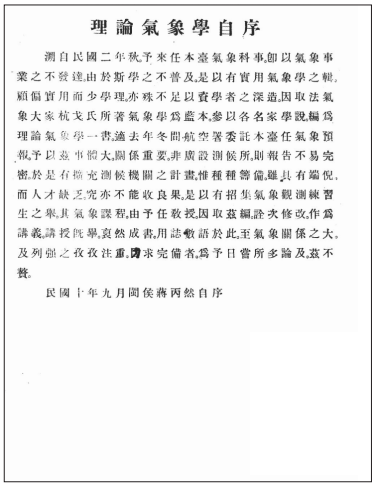
《理论气象学》1921 年版

“Theoretical Meteorology” (1921 Edition)




理論氣象學自序

溯自民國二年秋,予來任本臺氣象科事,卽以氣象事業之不發達,由於斯學之不普及,是以有實用氣象學之輯,頗偏實用而少學理,亦殊不足以資學者之深造,因取法氣象大家杭戈氏所著氣象學爲藍本,參以各名家學說,編爲理論氣象學一書,適去年冬間航空署委託本臺任氣象預報,予以茲事關大,關係重要,非廣設測候所,則報告不易完密,於是有添充測候機關之計畫,惟種種籌備,雖具有端倪,而人才缺乏,究亦不能收良果,是以有招集氣象觀測練習生之舉,其氣象課程,由予任教授,因取茲編,詮次修改,作爲講義,講授既畢,爰然成書,用誌數語於此,至氣象關係之大,及列强之孜孜注重,與求完備者,爲予日嘗所多論及,茲不贅。

民國十年九月閻侯蔣丙然自序

1927 年，以北京大学为核心的中国学术团体协会与瑞典探险家斯文赫定博士（Dr. Sven Hedin）联合组成的西北科学考察团。考察团于 1927 年 5 月从北京出发，经包头、百灵庙至额尔济纳河流域，于 1928 年 2 月到达乌鲁木齐。北京大学物理系学生李宪之、刘衍淮参加西北考察团，任气象生。考察团负责气象工作的是德国人郝德博士（Dr. W. Haude）。

正是由于西北考察团的经历，郝德博士于 1930 年推荐李宪之和刘衍淮赴德国柏林大学攻读气象学博士学位。刘衍淮于 1934 年获博士学位后回国，任教北平师范大学。李宪之于 1934 年获博士学位后，继续做博士后，于 1936 年回国。他们回国后，为中国气象事业的开拓和奠基做出了卓越贡献。

In 1927, the Chinese Academic Association led by Peking University and Dr. Sven Hedin, a Swedish explorer, together formed the Northwest Scientific Expedition. The expedition departed from Beijing in May 1927, went through Baotou, Bailing Temple, and the Erzina River Basin, and arrived at Urumqi in February 1928. Sjan-Zsi Li and Yandhuai Liu, students in the Department of Physics at Peking University, participated in the scientific expedition and served as assistants in the meteorology experiments, which was led by Dr. W. Haude, a German meteorologist.

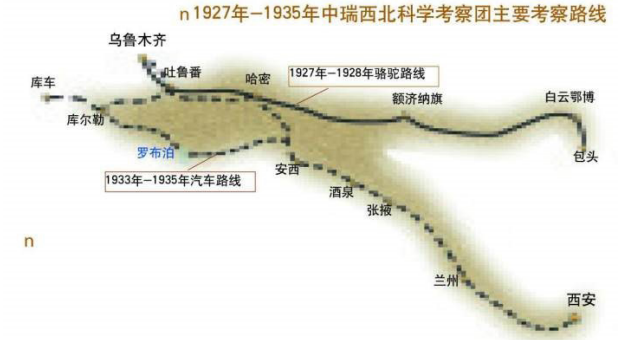
Due to their experience during the expedition, Dr. W. Haude recommended that Sjan-Zsi Li and Yan-huai Liu pursue Ph.D. degrees in meteorology at the University of Berlin in Germany in 1930. After receiving their Ph.D. degrees in 1934, Yan-huai Liu returned to China and joined Beiping Normal University, while Sjan-Zsi Li continued with his postdoctoral research and returned to China in 1936. They both made outstanding contributions to the founding and development of meteorological services and research in China after their returns.

1927 年，李宪之（右一）、刘衍淮（右三）等参加中国瑞典联合西北科学考察团
In 1927, Sjan-Zsi Li (1st in the right) and Yan-huai Liu (3rd in the right) participated in the China-Sweden Northwest Scientific Expedition

中瑞西北科学考察团路线图
The route of the China-Sweden Northwest Scientific Expedition

西北科学考察团里的气象学家在释放测风气球，作沿途各地的气象考察。手执气球者为郝德博士
Meteorologists in the Northwest Scientific Expedition were releasing a balloon to measure wind speed. Dr. W. Haude was holding the balloon

查看百叶箱者为李宪之，手执湿度计的为刘衍淮
Sjan-Zsi Li, who was reading the instrument shelter, and Yan-huai Liu, who was holding the hygrometer

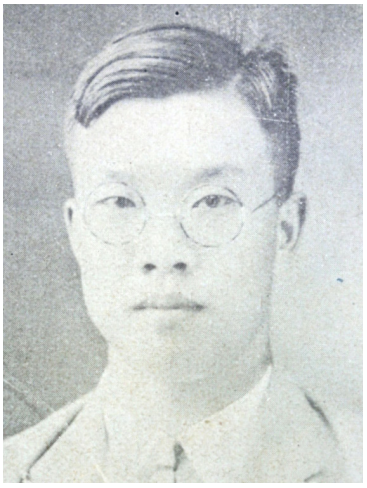


北京大学欢送首次西北科学考察团
Peking University sent the first Northwest Scientific Expedition

开创
Creation

1929-1936

开创
Creation (1929-1936)

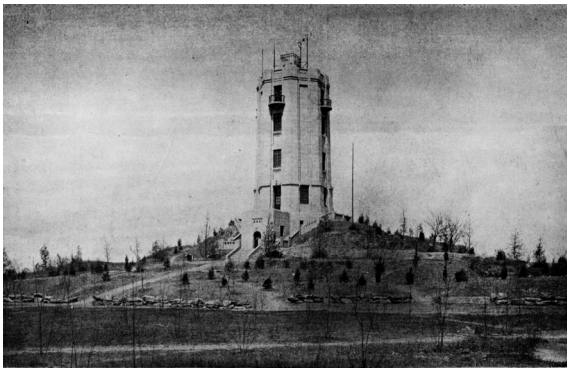


黄厦千
Xiaqian Huang
(1898-1977)

1928 年 11 月，清华大学董事会决定成立地理学系，下设地理、地质、气象三组，地质学家翁文灏任系主任，于 1929 年开始招生。北大大气科学学科 90 年的历程由此开始。

1929 年，黄厦千先生入职清华地理系，任讲师，主持气象教学工作，并担任气象台台长，成为清华地理系气象学专业的创办人。黄厦千于 1935 年离任。

1931 年，清华大学气象台建成（今清华大学天体物理研究所）。气象台聘用了几位助理观测员（当时称“测候员”），负责气象台的日常气象观测。那时探空不是使用气球，而是使用风筝。1933 年 9 月 8 日，气象台助理史镜清在释放探空风筝时触电身亡，竺可桢在悼词中说史镜清是“气象学界因技术而牺牲的第一人”。



1931 年落成的清华大学气象台
Tsinghua University Meteorological Observatory
established in 1931

In November 1928, the Board of Tsinghua University decided to establish the Department of Geography, which consisted of three programs: geography, geology, and meteorology. The geologist Wenjun Weng was the head of the department. The department began recruiting students in 1929. This was the year when the 90-year journey of Peking University’s Atmospheric Science Discipline began.

In 1929, Xiaqian Huang joined the Department of Geography at Tsinghua University as a lecturer and led the teaching of meteorology. He then served as the director of the Meteorological Observatory of Tsinghua University. He was the founder of the meteorology major in the Department of Geography at Tsinghua University. Xiaqian Huang left Tsinghua University in 1935.

In 1931, the Meteorological Observatory (now The Institute of Astrophysics at Tsinghua University) was established. Several assistant observers ("meteorological observers") were hired to conduct the daily meteorological observations at the observatory. At that time, the soundings were performed using not balloons, but kites. On 8 September 1933, Jingqing Shi, an assistant at the Meteorological Observatory, was electrocuted when he released a sounding kite. Kezhen Zhu, in his eulogy, said that Jingqing Shi was "the first person who sacrificed his life due to technical operation in the field of meteorology."

李良骐
Liangqi Li（1909～2008）

1934 年，气象学专业第一位学生李良骐毕业（1930 级），任职中央研院气象研究所，抗战胜利后曾在清华大学气象系任教，投身中国的气象事业，历经 70 多年。李良骐的儿子李启泰是北京大学物理系气象专业 1956 级学生。两代人均与北大大气科学学科结缘，堪称佳话。

In 1934, Liangqi Li, the first student who majored in meteorology, graduated (he had matriculated in 1930) and went to work at the Institute of Meteorology of the Central Research Institute. After China's victory in the Anti-Japanese War, he taught at the Department of Meteorology of Tsinghua University and devoted himself to the meteorological education of China for more than 70 years. Qitai Li, his son, graduated from the Department of Physics of Peking University with a major in Meteorology in 1956. Two generations in the family were thus related to Peking University's Atmospheric Science Discipline.

刘衍淮
Yan-huai Liu
(1907-1982)

1934 年，刘衍淮先生获德国柏林大学博士学位，同年回国，任教北平师范大学，并借聘到清华大学地学系，任讲师，讲授气象学。

In 1934, Yanhuai Liu received his Ph.D. degree from the University of Berlin, Germany. He returned to China in the same year and joined Beiping Normal University. He was also hired as a lecturer by the Department of Geography of Tsinghua University to teach meteorology.

涂长望
Changwang Tu
（1906—1962）

1935 年，清华大学地学系设置气象组。1935 年 9 月，自英国留学归来的涂长望先生借聘到清华大学地学系，任讲师。一年后，涂长望离任，回南京中央研究院气象研究所工作。

In 1935, the Department of Geography at Tsinghua University established its program of Meteorology. In September 1935, Mr. Changwang Tu, who returned to China after studying in the UK, was hired by the Department of Geography of Tsinghua University as a lecturer. He left a year later to work at the Nanjing Institute of Meteorology.

李宪之
Sjan-Zsi Li（1904 ～ 2001）

1936 年，李宪之先生自德国学成归来，任清华地学系讲师（1937 年升任教授），开设气象学 、天气预报和理论气象学三门课程。李宪之先生也自此开始了与我们学科长达 65 年的伴随，他不仅是北大大气科学学科的奠基者之一，也是学科的忠诚守望者，正是他的坚守，使学科在艰难困苦的早期得以持续和发展。

In 1936, Sjan-Zsi Li returned from Germany and became a lecturer in the Department of Geography, Tsinghua University. He was promoted to a professor in 1937. Sjan-Zsi Li taught three courses: meteorology, weather forecasting, and theoretical meteorology. Since then, Sjan-Zsi Li had work restlessly in the discipline of Atmospheric Sciences for 65 years. He was not only one of the founders of the discipline at Peking University but also the caretaker of the discipline. It was his tenacity that kept the discipline alive and well during the early stages of hardship.

守望

Perseverance

1937-1951

守望
Perseverance(1937-1951)

1937 年 7 月 7 日，七七事变爆发，7 月底，平津沦陷。为保存文化火种，北大、清华、南开被迫南迁，组成长沙临时大学，10 月 25 日临大开学，11 月 1 日正式上课。

长沙临时大学租借湖南圣经书院作为教学楼
Changsha Temporary University rented Hunan Bible College as the teaching building

随着日军步步进逼，长沙危急。1938 年 2 月，临大决定向西南迁至昆明，组建国立西南联合大学。临大师生分三路向昆明进发，经过两个多月的艰难跋涉，4 月 28 日汇聚昆明，开始了长达 8 年的西南联大时期。

长沙临时大学师生西迁入滇示意图
The route through which teachers and students of Changsha Temporary University moved westwards to Kunming

The Lugou Bridge Incident took place on July 7, 1937. By the end of July that year, Beijing and Tianjin had both fallen into the hands of the Japanese. To maintain the capacity of high education and, Peking University, Tsinghua University, and Nankai University were forced to move south and formed the Changsha Temporary University. The temporary university opened on October 25, and classes began on November 1.

国立长沙临时大学校徽
The insignia of National Changsha Temporary University

As the Japanese army approached, Changsha was also in danger. In February 1938, it was decided that Changsha Temporary University would move to Kunming to become the National Southwestern Associated University. After more than two months' trudge via three different routes, the teachers and students gathered in Kunming on April 28. This

穿越湖南常德地区蚕豆地的临大师生长征队伍
Teachers and students of Changsha Temporary University passing through a bean farm in Hunan Province

1938 年 4 月 2 日，国民政府教育部发电命令，“国立长沙临时大学”改称为“国立西南联合大学”，5 月 4 日开始上课。北大地质系和清华地学系合并成立西南联合大学地质地理气象学系，设地质、地理和气象三组。

西南联合大学校门
The gate at the Southwestern Associated University

西南联大图书馆和教室
Library and classroom of Southwestern Associated University

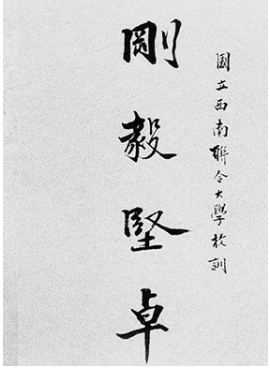
西南联大的教室
Classroom of Southwestern Associated University

marked the start of the 8-year period of the National Southwestern Associated University.

On April 2, 1938, the Ministry of Education of the National Government announced that “National Changsha Temporary University” was renamed to “National Southwestern Associated University”. Classes then began on May 4. The Department of Geology of Peking University and the Department of Geography of Tsinghua University were combined into one department with three programs, including geology, geography, and meteorology.

西南联大校徽
The insignia of Southwestern Associated University

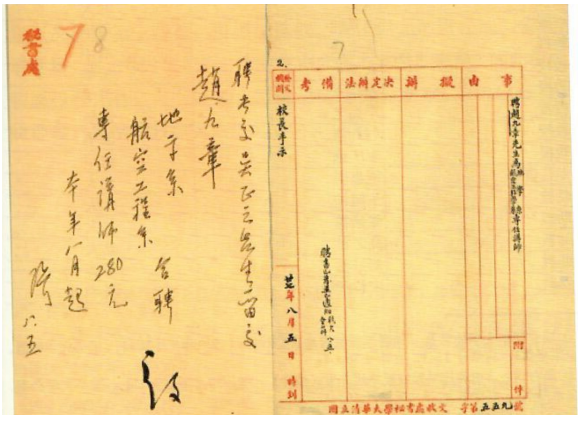
西南联大校旗
The flag of Southwest Associated University



西南联大校训
The motto of Southwest Associated University

1938 年，赵九章先生获德国柏林大学博士学位，并回国任教西南联大，讲授高空气象学、理论气象学和大气物理学等课程。

赵九章先生的归来不仅对西南联大气学科的发展是一个极大的推动，也极大地促进了中国气象事业的发展。他是第一个把数学和物理引入气象学，使气象学从以描述性为主的学科转变为以数理基础为主的定量化的科学。这也成为北大大气科学学科和我国气象科学的教学和人才培养理念。赵九章先生对推动中国气象、空间物理、地球物理、气象卫星等领域的发展居功至伟。



梅贻琦：《聘赵九章先生为地学系、航空工程学习专任讲师》（1938 年 8 月 5 日）
Yiqi Mei: "The appointment of Mr. Jeou-jang Jaw as the lecturer of the Department of Geosciences and the Program of Aviation Engineering" (5 August 1938)

西南联大期间，环境艰苦，物质生活条件尤其匮乏。但强敌压境、民族危亡极大地激发了师生们的科学救国热情。有赖于李宪之和赵九章先生的坚守，气象学科得以生存和发展。

In 1938, Jeou-jang Jaw received his doctoral degree from the University of Berlin, Germany. He then joined the Southwestern Associated University and taught courses on aerography, theoretical meteorology, and atmospheric physics.

Jeou-jang Jaw's return not only greatly promoted the development of the Discipline of Atmospheric Sciences at the Southwestern Associated University, but also significantly advanced the field of meteorology in China. He was the first to introduce mathematics and physics into meteorology, transforming the field from a descriptive discipline to a quantitative science based on a foundation of mathematics. This became the principle of teaching and education of students and young professionals in the Discipline of Atmospheric Sciences at Peking University and more generally in meteorology sciences in China. Professor Jeou-jang Jaw has made great contributions to the fields of meteorology, space physics, geophysics, and satellite meteorology in China.

赵九章 Jeou-jang Jaw（1907-1968）

Life during the period of the Southwestern Associated University was very hard. However, teachers and students were greatly motivated by the urgent need to servee the country. Owing to the perseverance of Professors Sjan-Zsi Li and Jeou-jang Jaw, the discipline of atmospheric sciences in China survived and continued to develop.

西南联大培养了一批杰出的气象学人才，如：顾震潮、谢义炳、叶笃正、郭晓岚等。这些西南联大时期培养的优秀毕业生，后来成为新中国大气科学事业继续发展的中流砥柱。其中谢义炳、叶笃正、郭晓岚是我们学科历史上的传奇，他们三人后来都到芝加哥大学跟随罗斯贝读博士，被称为芝加哥大学的三剑客。

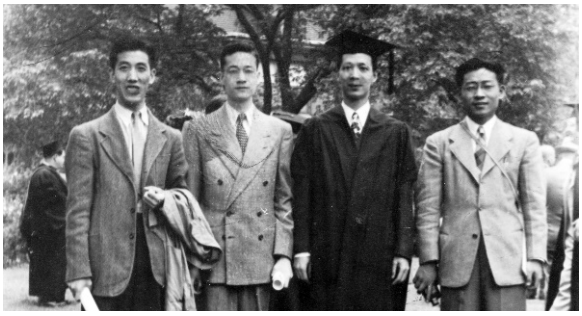
顾震潮（1920 -1976），学科历史上的第一位研究生，1943-1945 在西南联大攻读研究生，师从赵九章
Zhenchao Gu (1920-1976), the first graduate student in the Discipline of Atmospheric Sciences, pursued graduate studies at Southwestern Associated University in 1943-1945 under the supervision of Jeou-jang Jaw

抗战期间，空军军官学校在昆明创办了 5 期测候训练班（即空军气象训练班），刘衍淮聘请李宪之、赵九章为训练班兼课，培养空军气象人才，服务艰苦卓绝的抗战。


國立西南聯合大學佈告

西南联大结束布告
Announcement of the close of the Southwestern Associated University

The Southwestern Associated University trained many outstanding meteorological scientists, including Zhenchao Gu, Yiping Hsieh, Tu-Cheng Yeh, and Hsiao-Lan Kuo. These graduates then played leading roles in the development of the discipline of atmospheric sciences in the People's Republic of China. Yiping Hsieh, Tu-Cheng Yeh, and Hsiao-Lan Kuo went to the University of Chicago for their doctoral degrees under the supervision of Dr. Ross Bay, and they were known as the "Three Musketeers at the University of Chicago".



1949 年，谢义炳在芝加哥获博士学位留念。自左至右：郭晓岚、叶笃正、谢义炳、冯新德
In 1949, Yiping Hsieh received his doctoral degree in Chicago. From left to right: Hsiao-Lan Kuo, Tu-Cheng Yeh, Yiping Hsieh, and Xinde Feng

During the War of Resistance against Japan, the Air Force Academy organized meteorological training courses in Kunming five times. Yan-huai Liu invited Sjan-Zsi Li and Jeou-jang Jaw to teach these courses to train meteorological professionals for the Air Force and to serve the needs of the country during the War.

抗日战争胜利后，1946 年西南联大三校返回京津。由于当时国家急需大量的气象专业人才，清华地学系气象组独立成气象学系。

清华大学气象系 1951 年毕业生（气象台三字为翁文灏先生手书）
Graduates of the Department of Meteorology of Tsinghua University in 1951 (The Chinese characters “meteorological station” were written by Mr. Wen-hao Weng)

1950 年，我们学科迎来了另一位对学科发展以及中国大气科学教育和气象事业的发展影响深远的人物，谢义炳先生。谢义炳于 1949 年获芝加哥大学博士学位，1950 年 9 月回国，任清华大学副教授和气象系副主任。

与赵九章先生一样，谢义炳先生强调数理基础对气象学的重要性，这也是后来清华气象系来到北大成为物理系一个的重要原因。

谢义炳（1917-1995）40 年代芝加哥大学密执根湖边
Yiping Hsieh (1917-1995), University of Chicago, Lake Michigan, in the 1940

After the victory against Japan, the three universities that consisted of the Southwestern Associated University returned to Beijing and Tianjin in 1946. Because a large number of meteorological professionals was urgently needed at that time, the meteorology program in the Department of Geology at Tsinghua University became the Department of Meteorology.

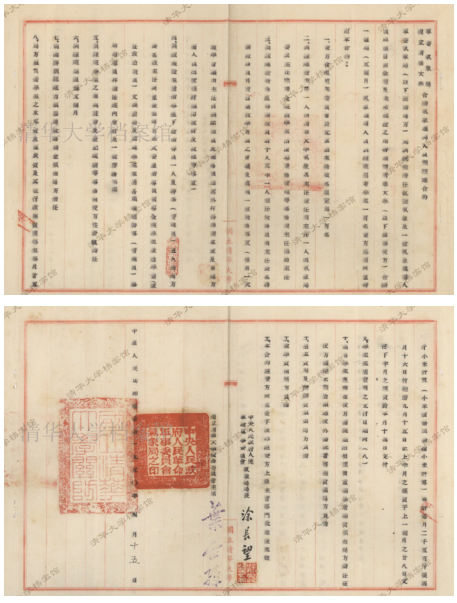
In 1950, Yiping Hsieh became the new figurehead of our discipline, and he had a profound influence on the development of the discipline and China’s atmospheric science research and education. Professor Yiping Hsieh received his doctoral degree from the University of Chicago in 1949. In September 1950, he returned to China and became an associate professor at Tsinghua University and the deputy director of the Department of Meteorology.

Like Professor Jeou-jang Jaw, Yiping Hsieh also emphasized the importance of the fundamental importance of physics and mathematics in meteorology. This is an important reason why the Department of Meteorology of Tsinghua University later became part of the Department of Physics when it moved to Peking University.

为了进一步推动大气科学学科的建设，也为了使教学与科研和气象业务相结合，李宪之还邀请中科院大气物理研究所叶笃正、中央气象局局长涂长望、联合天气分析预报中心主任顾震潮等到清华兼课，同时不断增加气象系的仪器设备和图书资料来改善教学条件。

1950 年 4 月到 9 月，因抗美援朝急需，军委气象局与清华大学气象系合办气象观测人员训练班。此后几十年间，这样的培训班经常举办，为新中国军事气象人才的培养也做出了巨大贡献。

清华大学和西南联大时期是我们学科的开创和守望阶段。通过李宪之、赵九章等先生不懈的努力，尤其是西南联大时期艰苦卓绝的坚持和守望，淬炼和铸就了本学科坚韧不拔、发奋图强的精神气质，为学科得以延续和发展打下了基础。



1950 年，军委气象局与清华大学合办气象观测人员训练班合约（签约人：军委气象局局长涂长望，清华大学校务委员会主席叶企孙）
The agreement for jointly organizing training courses for meteorological observers by the Meteorological Administration of the Military Commission and Tsinghua University.(Signed by Changwang Tu from the Meteorological Administration of the Military Commission and Chi-Sun Yeh from Tsinghua University)

To further advance the Atmospheric Science Discipline and to combine teaching and research with meteorological services, Sjan-Zsi Li invited Tu-Cheng Yeh (of the Institute of Atmospheric Physics, Chinese Academy of Sciences), Changwang Tu (Director of the National Meteorological Administration), and Zhenchao Gu (Director of the Joint Weather Analysis and Forecasting Center) to teach courses at Tsinghua University. He also continuously enhanced the research and library capacities of the Department.

During April-September 1950, the Meteorological Administration of the Military Commission and the Department of Meteorology of Tsinghua University jointly organized training courses for meteorological observers and researchers. Such training courses were held frequently in the following decades and made great contributions to the Chinese military meteorological service.

The periods of Tsinghua University and Southwestern Associated University were the pioneering and perseverance stage of our discipline. Through the unremitting efforts of teachers such as Sjan-Zsi Li and Jeou-jang Jaw, especially in the difficult period of the Southwestern Associated University, the unpretentious and persevering spirits of the discipline were created, which laid a solid foundation for the continuation and development of the discipline.

耕耘

Cultivation

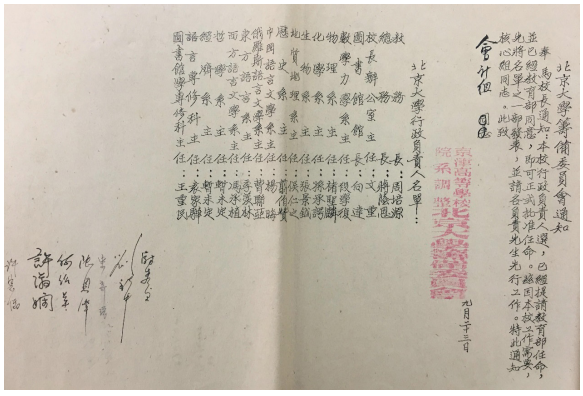
1952-1976

北京大学
PEKING UNIVERSITY

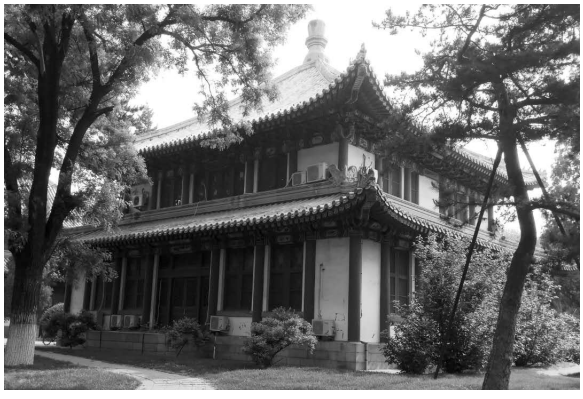
耕耘
Cultivation(1952-1976)

1952 年，国家为适应经济建设的需要，仿效前苏联高等院校体制进行院系调整，清华大学气象系全体师生进入北京大学。因强调数理基础，气象系并入北大物理系，成为气象专业。

气象专业当时办公及图书室均在燕园南阁，部分实验室在当时的物理南楼。



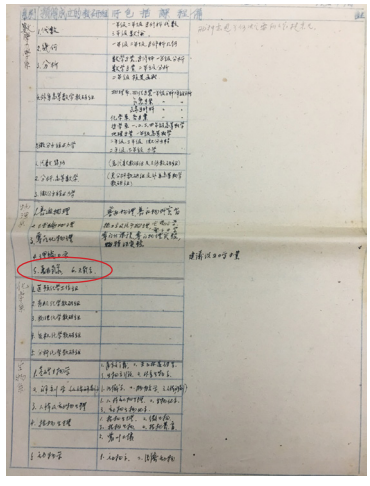
1952 年院系调整时北大各系负责人名单
List of the department chairs and directors of Peking University during school adjustment in 1952



北京大学南阁
South Pavilion of Yan Yuan, Peking University

In 1952, in order to meet the needs of the economic growth in the nation, universities and departments in China were reorganized following the academic system of the former Soviet Union. All the teachers and students of the Department of Meteorology of Tsinghua University moved to Peking University. Due to its strong ties with mathematics and physics, the Department of Meteorology was incorporated into the Department of Physics of Peking University and became the Meteorology Program.

At that time, the offices and library of the Meteorology Program were located in the South Pavilion of Yan Yuan, and some of the laboratories were in the North Physics Building.



1952 年，北京大学各系设立教研室一览表，物理系设立普通气象和天气学教研室
List of teaching and research groups at Peking University. The Department of Physics established meteorology and weather dynamics groups

气象专业下设天气动力学和气象学两个教研（组）室，主任由谢义炳担任，教员有：李宪之、谢义炳、严开伟、仇永炎、唐知愚、杨大升、赵柏林、殷宗昭等。还聘请了中科院地球物理研究所（大气物理研究所前身）赵九章、叶笃正、顾震潮、陶诗言诸先生以及国家气象局涂长望局长等作为兼职教授、副教授。

气象专业为强化数理基础，谢义炳邀请著名物理学家叶企孙教授开设“大气声光电学”，开创了大气物理学的先河，赵柏林院士当时任叶企孙先生的助教。

叶企孙先生对气象学科非常重视。1930 年，他建议物理系毕业生赵九章赴德国柏林大学学习气象学，1948 年代理气象系系主任，为气象系讲授大气声光电课程，他对气象学业的支持一直延续到北京大学。

叶企孙 Chi-Sun Yeh（1898-1977）

The Meteorology Program consisted of two teaching and research groups: atmospheric physics and meteorological dynamics. Professor Yiping Hsieh was the director. The faculty members included Sjan-Zsi Li, Yiping Hsieh, Kaiwei Yan, Yongyan Qiu, Zhiyu Tang, Dasheng Yang, Bolin Zhao, and Zongzhao Yin. In addition, scientists including Jeou-jang Jaw, Tu-Cheng Yeh, Zhenchao Gu, and Shiyan Tao from the Institute of Geophysics of the Chinese Academy of Sciences (the predecessor of the Institute of Atmospheric Physics), as well as Changwang Tu, Director of the National Meteorological Administration, were employed as adjunct professors or associate professors.

To strengthen the physical foundation of the Meteorology Program, Yiping Hsieh invited a famous physicist, Professor Chi-Sun Yeh, to teach the course of “Atmospheric Acoustics”, which pioneered the field of atmospheric physics. Academician Bolin Zhao was Mr. Chi-Sun Yeh’s teaching assistant at that time.

Professor Chi-Sun Yeh strongly supported the advancement of the meteorology discipline. In 1930, he advised that Jeou-jang Jaw, a graduate of the Department of Physics, go to Berlin University to study

1953 年 6 月，摄于北京大学原物理南楼（左起叶企孙、叶铭汉）
Chi-Sun Yeh (left) and Ming Hang Ye (right) in front of the former Physics South Building of Peking University in June 1953

50 年代，王竹溪先生为物理系学生讲授热力学和统计物理。他渊博的知识、风趣幽默的讲课风格至今仍被广大校友们津津乐道。

王竹溪 Zhuxi Wang（1911-1983）

1952 年体制改革后，为适应国家对气象人员的急需，北大物理系气象专业招收新生 100 名，其中 50 人读四年制的本科，50 人读两年制专修科。这是我国气象教育中唯一的一次气象专修科。

1952-1954 年办过一期气象专修科毕业合影
Graduation photo of the Meteorology specialized class in 1952-1954

1956 年，随着向“科学进军”和“十二年科学远景规划”的逐步展开，物理系气象专业大规模扩招，仅 1956 级就招收了 150 人。

meteorology. In 1948, he was the head of the Department of Meteorology and taught the course on sounds, lights, and electricity in the atmosphere. He continued to support the development of the meteorology discipline well after it moved to Peking University.

In the 1950s, Mr. Zhuxi Wang taught thermodynamics and statistical physics to students in the Department of Physics. His immense knowledge and humorous lecture style are still fondly remembered by many of his students.

After the structural reform in 1952, in order to meet the urgent national need for meteorological professionals, the Meteorology Program in the Department of Physics at Peking University recruited 100 new students. Among them, 50 students pursued four-year bachelor's degrees, and 50 students were in the two-year specialty degree; this was the only specialty degree in meteorological education in China at the time.

In 1956, with the gradual development of the "Science March" and the "12-Year Program for the Development of Science and Technology", the Meteorology Program in the Department of Physics expanded at a large scale. A total of 150 students enrolled in that year.

1962 年，地球物理系大气物理、空间专业 56 级毕业留念（前排左六为王竹溪副校长）
Graduation photo of the Class of 1956 Atmospheric Physics and Space Physics Program, Department of Geophysics in 1962 (sixth in the left of the front row: vice president Zhuxi Wang)

为了教学急需，在学习苏联的高潮中，仇永炎、谢义炳、唐知愚、杨大升等和有关院校及科研单位合作翻译部分苏联教材，如《气象学教程》、《动力气象学》和《气候学教程》等，这些书内容丰富而严谨，成为当时国内气象教学的重要参考书。

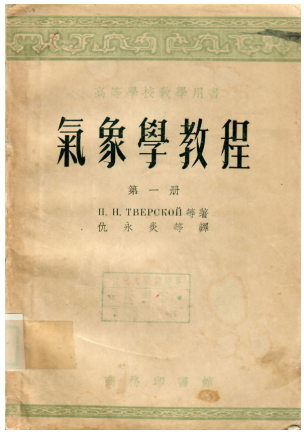
1959 年，气象专业首先出版了谢义炳等编著的中国第一本天气学教材《天气学基础》。随后，在教学实践的基础上，由仇永炎、杨大升、严开伟、赵柏林、李其琛等分别编写了《天气学》，《动力气象学》、《大气湍流》、《云雾物理》、《大气光学、 声学、 电学和无线电气象学》 等，这些为专业课教学提供了系统的教材，也成为了全国高校气象类专业的教材。

严开伟指导青年教师和学生自行设计和研制了许多先进的气象仪器，如热电偶温度表、热敏电阻温度表、热线风速仪、肠衣湿度表等。李琪琛是世界上第一个把相干散射引入雷达气象方程的科學家，並对其作用进行了理论分析，受到国内外科学界的好评和重视。

1963 年，地球物理系气象专业 57 级毕业留念（前排左六为周培源副校长、左七为陆平校长）
Graduation photo of the Class of 1957 Meteorology majors, Department of Geophysics in 1963 (front row, sixth from the left: vice president Peiyuan Zhou, seventh from the left: president Ping Lu)

To meet the urgent teaching needs and learning from the former Soviet Union, faculty members including Yongyan Qiu, Yiping Hsieh, Zhiyu Tang, and Dasheng Yang collaborated with other universities and research institutions and translated some Soviet textbooks, including “Meteorology”, “Dynamical Meteorology”, and “Climatology”. These textbooks had rich and rigorous contents and became important reference books for meteorological education in China at that time.

In 1959, the Meteorology Program published the first textbook on synoptic meteorology, “The Basis of Synoptic Meteorology”, edited by Yiping Hsieh and others. Subsequently, on the basis of their teaching experience, Yongyan Qiu, Dasheng Yang, Kaiwei Yan, Bolin Zhao, Qichen Li wrote the textbooks "Synoptic Meteorology", "Dynamic Meteorology", "Atmospheric Turbulence", "Cloud Physics", and "Atmospheric Optics, Acoustics, Electricity and Radio Meteorology”, respectively. These textbooks provided systematic teaching materials for the discipline and became the textbooks for



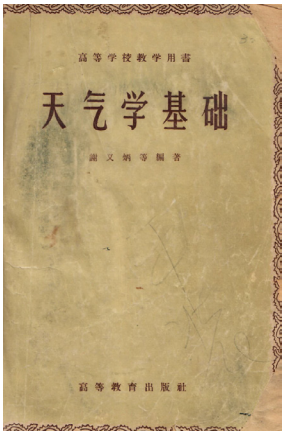
仇永炎等翻译的《气象学教程》
"Meteorology" translated by Yongyan Qiu et al.

杨大升等翻译的《动力气象学》
"Dynamic Meteorology" translated by Dasheng Yang et al.

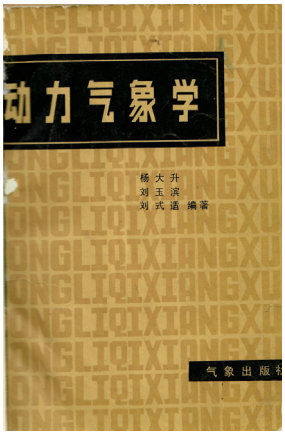
谢义炳、唐智愚、杨大升翻译的《气候学教程》
"Climatology" translated by Yiping Hsieh, Zhiyu Tang, and Dasheng Yang

meteorological majors in colleges nationwide.

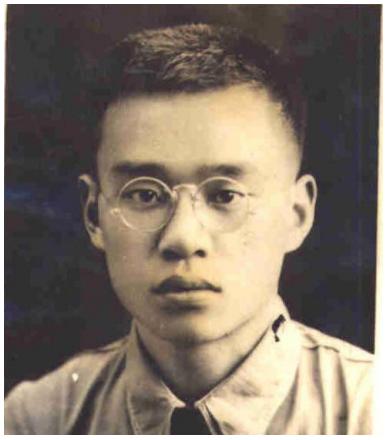
Kaiwei Yan led young teachers and students in the design and development of many advanced meteorological instruments, such as thermocouple thermometers, thermistor thermometers, hot-wire anemometers, and casing moisture meters. Qiwei Li was the first scientist in the world to introduce coherent scattering into the radar meteorological equations and carried out a theoretical analysis on its influence. The theory was well received and highly regarded by both domestic and international scientists.



谢义炳编著的《天气学基础》
"The Basis of Synoptic Meteorology" edited by Yiping Hsieh



杨大升、刘玉滨、刘式适编著的《动力气象学》
"Dynamic Meteorology" edited by Dasheng Yang, Yubin Liu, and Shikuo Liu



大学时代的严开伟（1940 年代）
Kaiwei Yan in the 1940s

20 世纪 50 年代的青年教师李其琛
Qichen Li in the 1950s

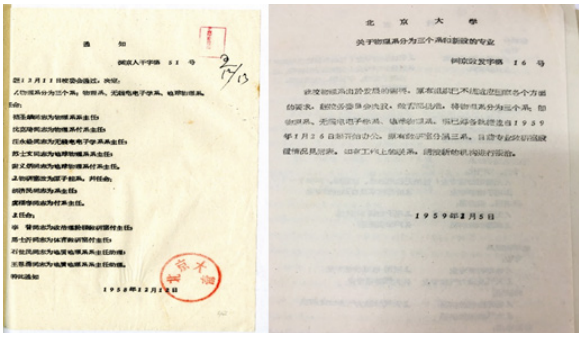
20 世纪五十年代中后期，中国在各方面都有突飞猛进的发展，北大物理系更是快速扩张，各专业都有发展的需要，另外，1957 年是国际地球物理年，外部形势加速了地球物理系的建立。

在当时的高教部部长杨秀峰和北京大学校长陆平的支持下，地球物理系于 1958 年 11 月筹建，12 月 11 日正式决定物理系分为三个独立的系：物理系、无线电电子学系和地球物理系。1959 年 1 月 26 日，三个系正式分开办公。

李其琛指导学生实验
Qichen Li advising students in experiments

In the mid-to-late 1950s, China made rapid progress in all aspects. The Department of Physics at Peking University expanded rapidly in all its majors. Th International Geophysics Year of 1957 accelerated the establishment of the Department of Geophysics.

With the support of Xiufeng Yang, the Minister of Higher Education, and Ping Lu, the President of Peking University at that time, a proposal to establish the at Peking University was brought forth in November 1958. On December 11, it was officially announced that the Department of Physics would be divided into three independent departments: the Department of Physics, the Department of Radio Electronics, and the Department of Geophysics. On January 26 1959, the three departments officially operated independently.



关于物理系分成三个系，地球物理系成立的正式通知
The official announcements of the division of the Department of Physics and the establishment of the Department of Geophysics

地球物理系包括五个专业：大气物理、天气动力、空间物理、地球物理、天文。其中从物理系气象专业分出来的大气物理专业和天气动力专业师资力量最为雄厚，基础也最好。李宪之任大气物理学教研室主任，沈锺任副主任；谢义炳任天气动力学教研室主任，陈文琦、唐知愚任副主任。

20 世纪 50 年代和 60 年代初期是北大大气科学历史上的一个黄金阶段，学科得到了快速发展和壮大，尤其是随着 50 和 60 年代一批优秀毕业生的留校任教，教师队伍也得到了壮大。

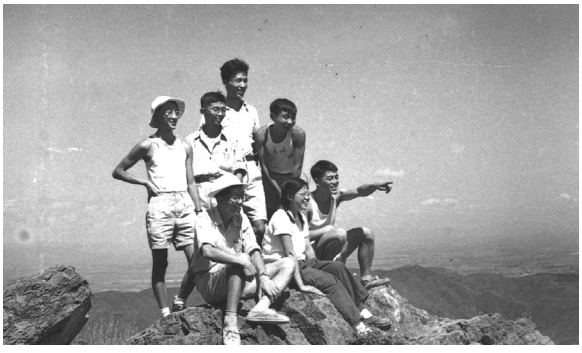
20 世纪 50 年代与苏联动力气象学家阿基莫维奇合影（左起顾震潮、王绍武、张玉玲、阿基莫维奇、赵九章）
A photo with the former Soviet Union meteorologist Artsimovich in the 1950s (from left to right: Zhenchao Gu, Shaowu Wang, Yuling Zhang, Artsimovich, and Jeou-jang Jaw)

除了正常的教学，北大地球物理系于 1958–1966 年期间，开办了气象函授专修班，尹宏任函授室主任，毕业学生近二百人。

1962 年，北京大学气象函授班集中函授留念
Specialized meteorology classes at Peking University in 1962

There were five programs in the Department of Geophysics: Atmospheric Physics, Meteorological Dynamics, Space Physics, Geophysics, and Astronomy. Among them, the majors of Atmospheric Physics and Meteorological Dynamics had the strongest faculty and research. Sjan-Zsi Li was the director of the Atmospheric Physics Program, and Zhong Shen was the deputy director. Yiping Hsieh was the director of the Meteorological Dynamics Program, with Wenqi Chen and Zhiyu Tang were the deputy directors.

The 1950s and the early 1960s were a golden age in the history of the Atmospheric Science Discipline at Peking University. The Discipline rapidly developed and expanded, with a group of outstanding graduates staying and becoming teachers in the discipline. The faculty had also been growing.



1956 级同学在香山鬼见愁（前排中，刘锦丽，后排左二，秦瑜，左四，吕达仁）
Students of the class of 1956 on the Fragrance Hill (Front middle: Jinli Liu, back row, second from the left: Yu Qin, fourth from the left: Daren Lv)

In addition to regular teaching, the Department of Geophysics at Peking University organized specialized meteorology classes from 1958 to 1966. Hong Yin was the director of the specialized classes, and nearly 200 students graduated from the classes.

10 年文革，一场浩劫。北大的教学和基础科研几乎处于停顿状态，部分教师疏散到江西鄱阳湖鲤鱼洲五七干校及北京大兴五七干校劳动锻炼，接受贫下中农再教育。

1971 年，北大教师在北京大兴县天堂河农场水房门前五七干校劳动锻炼
（前排由左向右：张玉玲、趙宗慈、校医院护士小陈、张希清；后排由左向右：郭廷斌、王子昌、陈仲生、鲁维钢、张胜宏）
Some teachers of Peking University worked in the Cadre School of Daxing, Beijing (from left to right, front row: Yuling Zhang, Zongci Zhao, Miss Chen of the university hospital, Xiqing Zhang; back row: Tingbin Guo, Zichang Wang, Zhongsheng Chen, Weigang Lu and Shenghong Zhang)

陶祖钰教授在当年的鲤鱼洲五七干校、如今的干校团部前留影
Professor Zuyu Tao in front of the Carp Island Cadre School, now the Cadre regiment headquarter

但即使如此，北大大气科学学科的师生们仍服务于国家需求，并做出了巨大贡献。1970 年，北京大学开始招收首届工农兵学员，至 76 年，地球物理系共招收了五届学员。

Nearly all teaching and basic research at Peking University halted during the ten years of the Cultural Revolution. Some of the teachers were assigned to the Carp Island Cadre School in Poyang Lake of Jiangxi Province and the Daxing Cadre School in Beijing to work and provide education for the poor and lower-middle-class peasants.

1972 年在北京大兴五七干校劳动锻炼
（左一为张玉玲）
Working in the Cadre School of Daxing, Beijing in 1972 (first from the left: Yuling Zhang)

Nevertheless, the teachers and students in the Discipline of Atmospheric Sciences at Peking University still served the needs of the country and made tremendous contributions. In 1970, Peking University started to recruit its first grade of worker-peasant-soldier students. By 1976, the Department of Geophysics had enrolled five classes of such students.

1970 级—首届工农兵学员毕业留念
Graduation photo of the Class of 1970 - the first class of worker-peasant-soldier students

1970–1978 年，为满足国家需求，地球物理系举办了各类培训班、进修班，计有：回炉班、人工影响天气短训班、气象短训班和中期预报进修班、数值天气预报班以及与中科院大气所和中央气象台联合举办的卫星云图分析与接收训练班和暴雨分析与预报进修班等，参加学员 400 余人。

因各类进修班亟需教师，从鲤鱼洲干校抽调了部分教师回校，于是气象专业的部分教师提前离开干校，重回教学岗位。

矗立在未名湖北岸的中国第一个卫星云图接收天线
China’s first satellite nephogram receiving antenna standing on the north shore of Weiming Lake

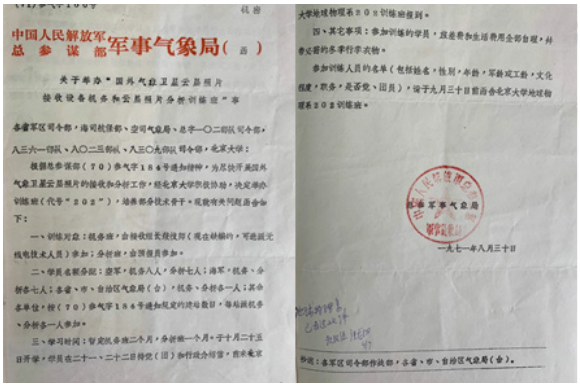
由于北大最早结束五七干校，科研教学活动已基本恢复，故把接收气象卫星的基地设在北大。北京大学地球物理系与中科院大气物理研究所、中央气象台在北大未名湖畔的体斋联合建立了中国第一个卫星云图接收站，接收美国第一代业务气象卫星发送的云图照片。螺旋形的接收天线安装在全斋东侧草地的铁塔上。体斋二楼是自主研发的接收设备和滚筒式云图扫描设备。根据自行计算的卫星轨道数据，可以实时接收卫星图片。

为在全国各地开展卫星云图的分析与接收业务，于 1971 年 9–12 月联合举办了训练班，培养了 118 名技术骨干，成为我国第一批应用卫星云图的技术骨干。

From 1970 to 1978, in order to meet the needs of the country, the Department of Geophysics held various short-term training courses on topics including weather modification, meteorology, mid-term weather forecasting, and numerical weather forecasting. In addition, a number of training courses were jointly organized with the Chinese Academy of Sciences and the Central Meteorological Observatory on satellite imagery analyses and severe weather analyses and forecasts Over 400 students were enrolled in these courses.

The various training courses required that the teachers return to Peking University from the Carp Island School. Therefore, some of the teachers in the meteorology program left Carp Island and returned to their teaching positions.

After Peking University ended the Cadre School, the research and teaching activities generally resumed. A new reception base for meteorological satellite signals was built at Peking University. The Department of Geophysics at Peking University, together with the Institute of Atmospheric Physics at the Chinese Academy of Sciences and the National Meteorological Center, established the first satellite imagery receiving station in China at the Ti Zhai Building near Weiming Lake of Peking University. This station was to receive nephograms from the first generation of U.S. operational meteorological satellites. A spiral receiving antenna was mounted on a tower standing to the east side of the Quan Zhai Building, and a self-developed receiving device and drum-type nephogram scanning device were installed on the second floor of the Ti Zhai Building. Satellite images could thus be received in real time based on


中国人民解放军
总 参 谋 部军事气象局（ 五 ）

关于举办“国外气象卫星云图照片
接收设备和云图照片分析训练班”事

各大军区司令部，海司航保部、空司气象局、总字一〇二部队司令部，八三六一部队、八〇二三部队、八三〇九部队司令部，北京大学：

根据总参谋部（７０）参气字１８４号通知精神，为尽快开展国外气象卫星云图照片的接收和分析工作，经北京大学积极协助，决定举办训练班（代号“２０２”），培养部分技术骨干，现就有关问题通告如下：

一、训练对象：机务班，由接收组负责组织（现在林锅的，可适当无线电技术人员）参加；分析班，由预报员参加。

二、学员名额分配：空军，机务八人，分析七人；海军，机务、分析各七人；各省、市、自治区气象局（台），机务、分析各一人；其中各单位，按（７０）参气字１８４号通知规定的接收数目，每站派机务、分析各一人参加。

三、学习时间：暂定训练二个月，分析班一个月。于十月二十五日开学，学员在二十一、二十二日持空（函）和行政介绍信，前来北京

一九七一年八月三十日

1971 年 - 卫星云图接收培训班（202 训练班）文件
Document of the training course on the reception of satellite nephograms (202 Training Class) in 1971


北大地球物理系教师为训练班编写、刻印的讲义，该讲义是我国关于卫星云图分析和接收的第一本教材

为培训班编写、刻印的讲义，是我国关于卫星云图分析和接收的第一本教材
The handout written and engraved for the training course, which was the first textbook about satellite nephogram analysis and reception in China.

10 年文革期间，基础研究完全停顿，仅有非常有限的应用类项目因当时应越战的需求得以开展。70 年代初期，北大科研处仅有 8 项应用类科研项目，地球物理系有两项，分别是赵柏林先生领导的微波辐射计研制和毛节泰教授领导的背景天空亮度研究。

calculated satellite orbit data.

Training courses were held in September-December 1971 on the reception and analysis of satellite nephograms. A total of 118 technicians were trained, and they became the first group of technicians to use satellite nephograms in China.

1971 年 - 卫星云图接收培训班（202 训练班）结业留念
Graduation photo of the training course on the reception of satellite nephograms (202 Training Class) in 1971

During the 10-year Cultural Revolution, fundamental research was completely stopped, except for some very limited projects, because of the needs of the Vietnam War. In the early 1970s, there were only eight applied research projects at the Research Office of Peking University, and two of them were in the Department of Geophysics: the development of the microwave radiometer, led by Professor Bolin Zhao, and the research on the background sky brightness, led by Professor Jietai Mao.

收获

Harvest

1977-2000

收获
Harvest（1977-2000）

1976 年，10 年文革结束，中国科学和教育迎来了又一个春天。1977 年，国家恢复高考，地球物理系大气物理学和天气动力学专业于 1978 年开始招生。

地球物理系 1978 级大气物理专业毕业留念
Graduation photo of the Class of 1978 Atmospheric Physics majors in the Department of Geophysics

1978 年，地球物理系的各项工作逐步走上正轨。教学上把学时制改为学分制，建立学士、硕士、博士三级学位制。设有大气物理学、天气动力学及气候学三个博士点和大气物理、天气和动力气象、气候学和大气探测四个硕士点，并设有博士后流动站。

经过 50-70 年代的长期耕耘，北大大气科学学科在 80-90 年代迎来了科研上的一个收获季节。1978 年，北大大气科学学科获 13 项“全国科学大会奖”，80-90 年代，获国家科技进步一等奖 3 项、二等奖 6 项、三等奖 6 项。

微波辐射计的研制成功和应用：1972 年赵柏林领导的科研组研制成功 5 毫米微波辐射计，以后又陆续研制成 5 — 30 毫米五个波段的辐射计系

In 1976, the 10-year Cultural Revolution ended, and science and education in China welcomed another promising spring. The university entrance examination resumed in 1977, and the Atmospheric Physics and Weather Dynamics majors in the Department of Geophysics began to recruit students in 1978.

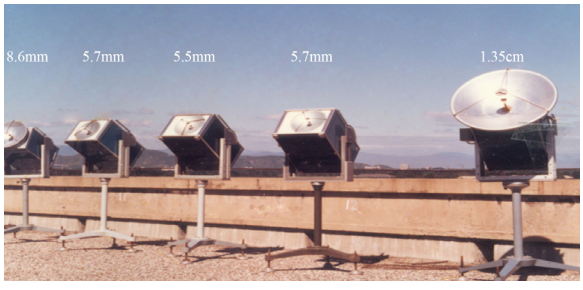
地球物理系 1978 级气象专业毕业留念
Graduation photo of the Class of 1978 Meteorology majors in the Department of Geophysics

In 1978, the Department of Geophysics changed from the time system to a credit system in teaching and set up a three-level degree system (bachelor, master, and doctor). It included three doctoral programs in Atmospheric Physics, Meteorological Dynamics, and Climatology, four master programs in Atmospheric Physics, Weather and Dynamic Meteorology, Climatology, and Atmospheric Measurements, and a postdoctoral program.

After decades of cultivation between the 1950s and the 1970s, the Discipline of Atmospheric Sciences

列，用于气象要素的遥感遥测，这项成果属世界先进。其成果“微波辐射计机器环境遥感应用”，于 1987 年获国家科技进步奖一等奖。

赵柏林教授为研究生讲解微波辐射计原理
Professor Bolin Zhao explaining the principle of microwave radiometer to graduate students



赵柏林教授主持研制的微波辐射计
The microwave radiometers developed by Professor Bolin Zhao

数值预报研究和数值模式发展：北大大气科学学科早在 50 年代就开始数值计算和数值预报的教学和科研，以张玉玲和陈受钧教授为主的团队，经过多年的努力，率先研发了数值预报模式，该模式后来在中国气象局业务预报中得到了运用和发展。其成果“短期数值天气预报业务系统（B）的建立与推广应用”，于 1985 年获国家科技进步奖一等奖。地球物理系在 1972 年主办全国第一个数值预报培训班。

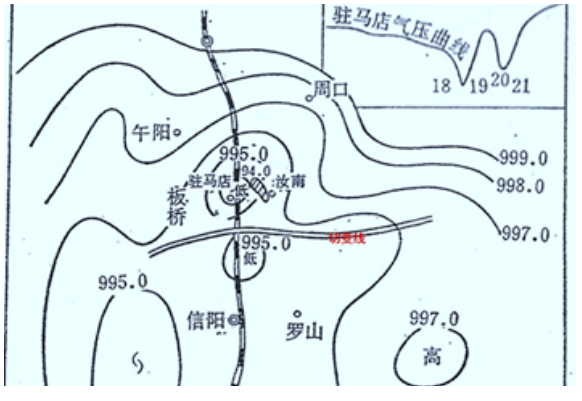
at Peking University ushered in a harvest season in scientific research in the 1980s and 1990s. In 1978, the Discipline won 13 National Science Conference Awards. In the 1980s and 1990s, the Discipline won a number of National Science and Technology Progress Awards, including 3 first prizes, 6 second prizes and 6 third prizes.

The successful development and application of the microwave radiometer: In 1972, the research team led by Bolin Zhao successfully developed a 5 mm microwave radiometer. His team later developed a radiometer series with five bands from 5-30 mm and applied it in the remote sensing of meteorological elements. This achievement, "Microwave Radiometer and Its Application in Environmental Remote Sensing ", was world-class and won the first prize of the National Science and Technology Progress Awards in 1987.

Numerical prediction research and numerical model development: The Atmospheric Science Discipline at Peking University began teaching and investigating numerical calculations and numerical predictions as early as the 1950s. The team led by Professors Yuling Zhang and Shoujun Chen developed a pioneering numerical forecast model after years of efforts. This model was later applied and further developed in operational forecasting at the Chinese Meteorological Administration. The achievement "Establishment and Promotion of the Short-Term Numerical Weather Forecasting Operational System (B)" won the first prize of the National Science and Technology Progress Awards in 1985. The Department of Geophysics held the first training course in China on numerical weather predictions in 1972.

数值预报培训班毕业留念
Graduation photo of the numerical prediction training courses

北方暴雨研究：暴雨使我国最易遭受的气象灾害之一，北大大气科学学科在谢义炳先生的带领下，自 50 年代就开始北方暴雨研究，取得了丰硕成果。1975 年 8 月，河南驻马店地区遭受特大暴雨，造成巨大灾害，谢义炳带领北大教师成立暴雨研究组，与中科院大气物理研究所、中央气象局气象科学研究院和北方 15 省市气象部门一起建立北方暴雨科研协作组，联合研究北方暴雨，攻克了北方暴雨预报难题，并在此基础上提出了湿斜压大气动力学问题。其成果“中国降水过程与湿斜压天气动力学”，于 1987 年获国家自然科学二等奖。



1975 年 8 月 7 日 19 点地面图，“75.8”暴雨研究组（1977）
Surface pressure map at 1900 on August 7 1975 drawn by the “75.8” Rainstorm Research Group (1977)

Research on Rainstorms in Northern China: Rainstorms are one of the most common meteorological disasters in China. Under the leadership of Yiping Hsieh, the Discipline of Atmospheric Sciences at Peking University began studying rainstorms in northern China in the 1950s and has achieved fruitful results. In August 1975, the Zhumadian area in Henan province was hit by extremely heavy rains. Yiping Hsieh led the faculty members of Peking University to set up a rainstorm research group and established a northern China rainstorm scientific research team together with the Institute of Atmospheric Physics of the Chinese Academy of Sciences, the Academy of Meteorological Sciences of the Chinese Meteorological Administration, and 15 provincial and city-level meteorological departments in northern China. The scientific research team studied the heavy rains and solved the problem of rainstorms in northern China, based on which wet baroclinic atmospheric dynamics was proposed. Their achievement, “Precipitation Process and Wet Baroclinic Weather Dynamics in China”, won the second prize of the National Natural Science Awards in 1987.

1988 年，谢义炳获芬兰 E.Palman 国际奖，是获该奖唯一的亚洲人，典礼后在招待会上谢义炳回答问题

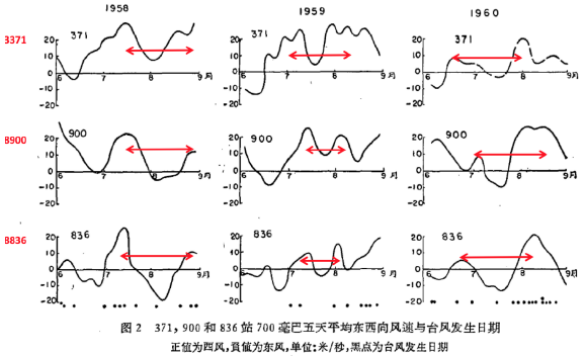


图 2　371，900 和 836 站 700 毫巴五天平均东西向风速与台风发生日期
正值为西风，负值为东风，单位：米/秒，黑点为台风发生日期

谢义炳、陈受钧等早在 1963 年就发现了热带西太平洋存在季节内振荡，但因为论文发表在中文期刊《气象学报》，他们的的成果并没有被国际同行了解到。1971 年，Madden 和 Julian 也发现了类似现象，因此，热带印度洋和西太平洋的季节内振荡被称为 Madden-Julian Oscillation.

Back in 1963, Yiping Hsieh, Shoujun Chen, et al. discovered that there were intraseasonal oscillations over the tropical Western Pacific. However, their paper was published in Chinese in the journal “Acta Meteorologica Sinica”, and therefore was not recognized by international peers. In 1971, Madden and Julian found similar phenomenon. The inter-seasonal oscillations over the tropical Indian Ocean and Western Pacific were then named Madden-Julian Oscillation.

五百年旱涝研究：1975 年，王绍武教授主持绘制了《东北、华北近五百年旱涝史料》和《东北、华北近五百年旱涝分布图》。1979 年，王绍武教授等又与气象科学研究院合作绘制了《历年旱涝等级分布图（1470 年 -1979 年）》，并增绘了《历年年降水量和年、季降水量距平百分率图（1951 年 -1979 年）》，1981 年，最终出版《中国近五百年旱涝分布图集》。这本图集是我国历史气候研究领域的里程碑，在国内外古气候学界享有盛名。

Research on drought and waterlogging over the past 500 years: In 1975, Professor Shaowu Wang presided over the projects “Drought and Flood in Northeast and North China in the Past 500 Years” and “The Distribution Map of Drought and Flood in Northeast and North China for Nearly 500 Years”. In 1979, he worked with the Academy of Meteorological Sciences and produced “The Distribution Map of Past Drought and Flood Levels (1470-1979)” and “Past Annual Precipitations and Anomalies in Annual and Seasonal Precipitations (1951-1979)”. He published in 1981 “An Atlas of Drought and Flood Distribution in China in the Past 500 Years”. This book was a milestone in the field of historical climate research in China and was highly regarded by the international community in paleoclimatology.

《中国近五百年旱涝分布图集》封面
Book cover of The Atlas

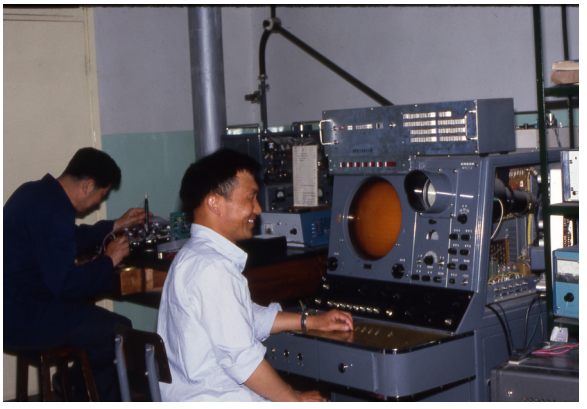
大气环境研究：在 20 世纪 80 年代初期，我国的经济和工业还不发达，大气污染和环境问题还没有被重视，但地球物理系大气物理专业陈家宜、秦瑜等就开始了大气污染和环境研究。现在，当我们面临巨大的大气污染挑战时，我们不得不佩服他们当年的远见卓识。

20 世纪 80 年代后期，秦瑜等在庐山开展酸雨观测实验。
Yu Qin and others conducted measurements of acid rain in Lushan in the late 1980s

1990 年 7 月 19 日，地球物理系师生做大气探空试验
Teachers and students of the Department of Geophysics launching a balloon sounding on 19 July 1990

在 1978 年的全国科学大会上，以微波辐射计为代表的 13 个项目获得了全国科学大会奖。此后，多项科研成果获国家科技进步奖及自然科学奖。

Atmospheric environment research: In the early 1980s, the economy and industry of China were still underdeveloped, and air pollution and environmental problems were not taken seriously. However, Jiayi Chen and Yu Qin of the Atmospheric Physics Program in the Department of Geophysics began to work on air pollution and environmental research. Now, as we face huge challenges of air pollution, we cannot help but respect their foresight at that time.



地球物理系张钧、吴保民在调试微波雷达。
Jun Zhang and Baomin Wu of the Department of Geophysics testing the microwave lidar

At the National Science Conference in 1978, microwave radiometers and 12 other projects won National Science Conference Awards. Since then, a number of other scientific research achievements have also won National Science and Technology Progress Awards or National Natural Science Awards.

获奖时间	获奖名称	科研成果	获奖人
1978 年	全国科学大会奖	热带副热带大型环流及中低纬环流系统的相互作用	谢义炳，张镡，蒋尚城
1978 年	全国科学大会奖	热成风建立和破坏与大尺度天气系统发生发展的物理过程	陈秋士
1978 年	全国科学大会奖	大气污染扩散规律的研究	殷宗昭，陈家宜等
1978 年	全国科学大会奖	气象卫星云图在天气分析预报中的应用	蒋尚城，张元箴
1978 年	全国科学大会奖	75．8 河南特大暴雨成因分析和华北内陆台风预报	谢义炳等
1978 年	全国科学大会奖	近五百年旱涝研究及超长期天气预报的试验	王绍武等
1978 年	全国科学大会奖	微波辐射计	赵柏林等
1978 年	全国科学大会奖	降水性层状冷云微物理特性的初步探讨	秦瑜等
1978 年	全国科学大会奖	飞机气象仪研制	潘乃先等
1978 年	全国科学大会奖	介乙醛作为冷云催化剂的试验研究	张铮等
1978 年	全国科学大会奖	低纬度天气预报分析方法	张镡
1978 年	全国科学大会奖	用于降水预报的五层原始方程数值预报模式	
1978 年	全国科学大会奖	西北太平洋五层天气预报模式	
1985 年	国家科技进步奖一等奖	短期数值天气预报业务系统（B）的建立与推广应用	张玉玲，陈受钧
1985 年	国家科技进步奖二等奖	北方暴雨预报方法及理论研究的推广应用	谢义炳，蒋尚城，张镡，陈受钧，谢　安等
1985 年	国家科技进步奖三等奖	寒潮中期预报理论和方法研究	仇永炎
1987 年	国家科技进步奖一等奖	微波辐射计及其环境遥感应用	赵柏林，杜金林，胡成达，李慧心，韩庆源，尹宏，朱元竞，付强等
1987 年	国家自然科学奖二等奖	中国降水过程与湿斜压天气动力学	谢义炳，陈受钧，张镡，陶祖钰，蒋尚城，张玉玲，谢安
1989 年	国家自然科学奖三等奖	天气和次天气尺度系统发展的物理过程和分解方法	陈秋士

获奖时间	获奖名称	科研成果	获奖人
1990 年	国家科技进步奖二等奖	我国酸雨的来源影响及其控制对策的研究	唐孝炎，毛节泰，秦瑜，张铮，盛裴轩等
1990 年	国家科技进步奖三等奖	人工降雨催化剂	张铮
1991 年	国家自然科学奖三等奖	非线性大气动力学若干问题的研究	刘式达，刘式适
1993 年	国家科技进步奖三等奖	有限区分析预报业务系统的研究和应用	张玉玲
1995 年	国家科技进步奖二等奖	中国中期数值天气预报业务系统	陈受钧
1997 年	国家科技进步奖二等奖	我国台风暴雨灾害性天气监测预报业务系统	陈受钧
1997 年	国家自然科学奖三等奖	东亚与热带大气低频变化及其气候异常机理研究	刘式适
2003 年	国家科技进步奖一等奖	我国短期气候预测系统的研究	王绍武
2012 年	国家自然科学奖二等奖	过去 2000 年中国气候变化研究	王绍武

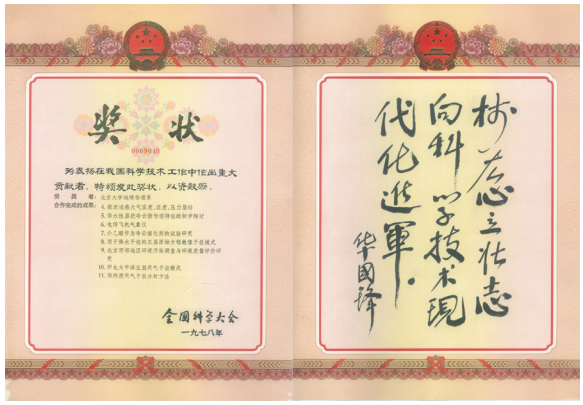
大气科学学科 1978- 至今国家级获奖 (只列北京大学获奖者)

Year	Award Name	Scientific Achievements	Awardee
1978	National Science Conference Award	Interaction of Large Circulations in Tropical and Subtropical Regions with Mid-low Latitudinal Circulation Systems	Yiping Hsieh, Tan Zhang, Shangcheng Jiang
1978	National Science Conference Award	The Physical Processes of the Onset and Destruction of Thermogenic Wind and the Development of Large-scale Weather Systems	Qiushi Chen
1978	National Science Conference Award	Research on the Law of Air Pollution Diffusion	Zongzhao Yin, Jiayi Chen, et al.
1978	National Science Conference Award	Application of Meteorological Satellite Image in Weather Analysis and Forecasting	Shangcheng Jiang, Yuanzhen Zhang
1978	National Science Conference Award	Analysis of the Cause of Heavy Rain in Henan Province in August 1975 and Forecast of Inland Typhoon in North China	Yiping Hsieh, et al.
1978	National Science Conference Award	Research of Drought and Flood over Past 500 Years and Test of Ultra-long-term Weather Forecast	Shaowu Wang, et al.

Year	Award Name	Scientific Achievements	Awardee
1978	National Science Conference Award	Microwave Radiometer	Bolin Zhao, et al.
1978	National Science Conference Award	A Study on the Microphysical Properties of Precipitable Cold Stratus Clouds	Yu Qin, et al.
1978	National Science Conference Award	Development of Airborne Meteorological Instruments	Naixian Pan, et al.
1978	National Science Conference Award	Experimental Study on the Use of Metaldehyde as a Cold Cloud Catalyst	Zheng Zhang, et al.
1978	National Science Conference Award	Analytical Methods of Weather Forecast at Low Latitude	Tan Zhang
1978	National Science Conference Award	Five-layer Original Equation Numerical Prediction Model for Precipitation Forecast	
1978	National Science Conference Award	Five-layer Weather Forecast Model Over Northwest Pacific Ocean	
1985	First Prize of the National Science and Technology Progress Award	Establishment and Promotion of the Short-term Numerical Weather Forecasting Operational System (B)	Yuling Zhang, Shoujun Chen
1985	Second Prize of the National Science and Technology Progress Award	Application of Rainstorm Forecasting Methods and Theoretical Research in Northern China	Yiping Hsieh, Shangcheng Jiang, Tan Zhang, Shoujun Chen, An Xie, et al.
1985	Third Prize of the National Science and Technology Progress Award	Research on the Theory and Method of Medium-term Forecast of Cold Wave	Yongyan Qiu
1987	First Prize of the National Science and Technology Progress Award	Microwave Radiometer and Its Application in Environmental Remote Sensing	Bolin Zhao, Jinlin Du, Chengda Hu, Huixin Li, Qingyuan Han, Hong Yin, Yuanjing Zhu, Qiang Fu, et al.
1987	Second Prize of the National Natural Science Award	Precipitation Process and Wet Baroclinic Weather Dynamics in China	Yiping Hsieh, Shoujun Chen, Tan Zhang, Zuyu Tao, Shangcheng Jiang, Yuling Zhang, An Xie

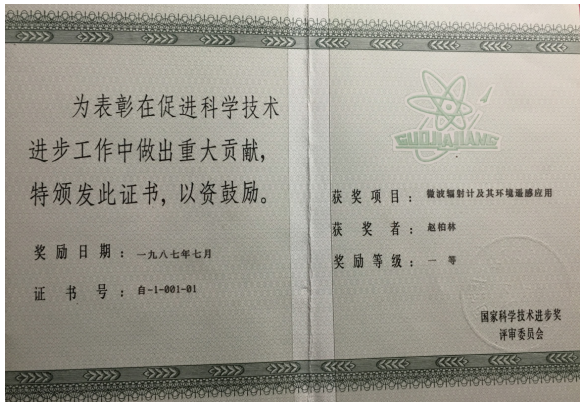
Year	Award Name	Scientific Achievements	Awardee
1989	Third Prize of the National Natural Science Award	Physical Processes and Decomposition Methods for the Development of Synoptic and Sub-synoptic Scale Systems	Qiushi Chen
1990	Second Prize of the National Science and Technology Progress Award	Research on the Influence of Acid Rain Source and Its Control Measures in China	Xiaoyan Tang, Jietai Mao, Yu Qin, Zheng Zhang, Peixuan Sheng, et al.
1990	Third Prize of the National Science and Technology Progress Award	Artificial Rainfall Catalyst	Zheng Zhang
1991	Third Prize of the National Natural Science Award	Research on Some Problems of Nonlinear Atmospheric Dynamics	Shida Liu, Shikuo Liu
1993	Third Prize of the National Science and Technology Progress Award	Research and Application of Finite Area Analysis and Forecasting Operational System	Yuling Zhang
1995	Second Prize of the National Science and Technology Progress Award	China's Medium-term Numerical Weather Forecasting Operational System	Shoujun Chen
1997	Second Prize of the National Science and Technology Progress Award	The Monitoring and Forecasting Operational System of Typhoon Storm and Disastrous Weather in China	Shoujun Chen
1997	Third Prize of the National Natural Science Award	Low-Frequency Variation in East Asian and Tropical Atmosphere and Its Climatic Anomaly Mechanism	Shikuo Liu
2003	First Prize of the National Science and Technology Progress Award	Research on China's Short-term Climate Prediction System	Shaowu Wang
2012	Second Prize of the National Natural Science Award	Research on Climate Change in the Past 200 Years in China	Shaowu Wang

National awards won by the Discipline of Atmospheric Sciences at Peking University between 1978 and the present (only Peking University awardees were listed)



1978 年全国科学大会奖
National Science Conference Award, 1978

1985 年国家科技进步一等奖 - 张玉玲、陈受钧
First Prize of the National Science and Technology Progress Awards, 1985 - Yuling Zhang, Shoujun Chen



1987 年国家科技进步一等奖 - 赵柏林
First Prize of the National Science and Technology Progress Awards, 1987 – Bolin Zhao

1987 年国家自然科学二等奖 - 谢义炳等
Second Prize of the National Natural Science Awards, 1987 – Yiping Hsieh et al

1990 年国家科技进步二等奖 - 唐孝炎等
Second Prize of the National Science and Technology Progress Awards, 1990 – Xiaoyan Tang

1995 年国家科技进步二等奖 - 陈受钧
Second Prize of the National Science and Technology Progress Awards, 1995 - Shoujun Chen

1997 年国家科技进步二等奖 - 陈受钧
Second Prize of the National Science and Technology Progress Awards, 1997 - Shoujun Chen

2003 年国家科技进步一等奖 - 王绍武
First Prize of the National Science and Technology Progress Awards, 2003 – Shaowu Wang

1952–2001，这是北大大气科学的一个蓬勃发展时期，学科排除各种政治运动的干扰，学科建设得到了巨大的发展，建立了完整的教学体系和出版了系统的教材。文革结束后，建立了完整的博士和硕士培养体系，科研成果大批涌现。这个时期，学科培养了大批优秀毕业生，学科的研究领域也非常广泛，强调创新性和前沿性。从本学科成长起来的 20 位两院院士中，有 13 位是在这个时期培养的毕业生（曾庆存、丑纪范、周秀骥、任振海、龚知本、吕达仁、李泽椿、丁一汇、黄荣辉、汪景琇、金亚秋、吴国雄、王会军），以及温克刚、马鹤年、李黄等数任中国气象局局长和副局长。

2012 年国家自然科学二等奖 - 王绍武
Second Prize of the National Natural Science Awards, 2012 – Shaowu Wang

1952-2001 was a period of vigorous development for the Discipline of Atmospheric Sciences at Peking University. Without the interference from political movements, the discipline was been greatly developed, establishing a complete curriculum and publishing a wealth of systematic teaching materials. After the end of the Cultural Revolution, a complete doctoral and master's curriculum was established, and a large number of scientific research achievements emerged. During this period, the discipline educated a large number of outstanding students and greatly expanded its research fields by emphasizing innovative and cutting-edge research. Among the 20 academicians who graduated from the discipline at Peking University, 13 of them graduated during this period (Qingcun Zeng, Chouji Fan, Xiuji Zhou, Zhenhai Ren, Zhiben Gong, Daren Lv, Zechun Li, Yihui Ding, Ronghui Huang, Jingyu Wang, Yaqiu Jin, Guoxiong Wu, Huijun Wang). Other notable graduates included Kegang Wen, Henian Ma, Huang Li, and several others, who served as directors or deputy directors of the Chinese Meteorological Administration.

迈向世界一流

Becoming world-class

2001- 至今

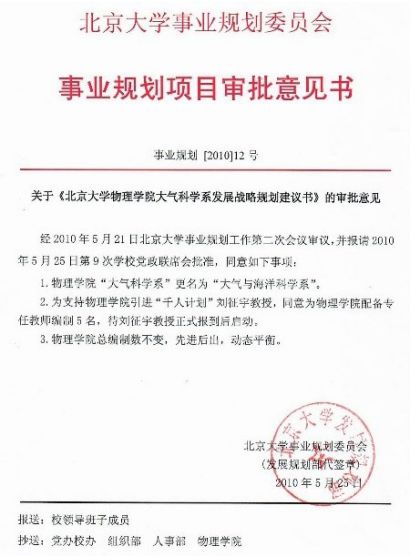
迈向世界一流
Becoming world-class（2001- 至今）

1998 年 5 月 4 日，在庆祝北京大学建校 100 周年之际，国家决定建设具有世界先进水平的一流研究型大学。1999 年，国务院批转教育部《面向 21 世纪教育振兴行动计划》，“985 工程”正式启动建设，北大大气科学学科也自此进入了一个新的发展时期，与国际接轨、建设世界一流的大气科学学科成为了学科的奋斗目标。

2001 年，北京大学进行院系调整，原地球物理系天气动力学专业和大气物理专业合并成为大气科学系，原物理系、技术物理系和与原地球物理系独立出来的天文系共同组建物理学院，这是北大大气科学学科又一次与物理学科结缘。

2008 年，北大大气科学学科与北京大学其它地球科学学科共同成立了国家级“地球科学教学实验中心－大气科学综合实验室”。

2009 年 9 月，为加强气候变化研究和开展海洋科学研究，物理学院开始酝酿增设物理海洋专业，并将大气科学系更名为大气与海洋科学系。12 月，北京大学批准成立大气与海洋科学系，并成立“气候与海气实验室”（下面的文件为 2010 年 5 月补发）。



北京大学事业规划委员会

事业规划项目审批意见书

事业规划 [2010]12 号

关于《北京大学物理学院大气科学系发展战略规划建议书》的审批意见

经 2010 年 5 月 21 日北京大学事业规划工作第二次会议审议，并报请 2010 年 5 月 25 日第 9 次学校党政联席会批准，同意如下事项：

1. 物理学院“大气科学系”更名为“大气与海洋科学系”。

2. 为支持物理学院引进“千人计划”刘钰宇教授，同意为物理学院配备专任教师编制 5 名，待刘钰宇教授正式报到后启动。

3. 物理学院总编制数不变，先进后出，动态平衡。

北京大学事业规划委员会
（发展规划部代签章）
2010 年 5 月 25 日

报送：校领导班子成员

抄送：党办校办 组织部 人事部 物理学院

2010 年 5 月，大气科学系更名为大气与海洋科学系
The Department of Atmospheric Sciences was renamed the Department of Atmospheric and Oceanic Sciences in May 2010

On May 4 1998, at the centennial of Peking University, China decided to build its first-class research universities with world-leading status. In 1999, the State Council approved the “Action Plan for Education Revitalization for the 21st Century”, proposed by the Ministry of Education, and the "985 Project" was officially launched. The Discipline of Atmospheric Sciences at Peking University then entered a new era of development. Connecting with the international community and building world-leading atmospheric research has become the goal of the Discipline.

In 2001, Peking University launched a program of department rearrangements. The Meteorological Dynamics and Atmospheric Physics Programs in the Department of Geophysics were merged to form the Department of Atmospheric Sciences. Together with the Departments of Physics, Technical Physics, and Astronomy, these four departments formed the new School of Physics. This was another point at which the Discipline of Atmospheric Sciences at Peking University formed ties to the discipline of Physics.

In 2008, the Discipline of Atmospheric Sciences and other geoscience disciplines at Peking University jointly established the national "Education and Experiment Center for Earth Sciences - Atmospheric Science Laboratory".

In September 2009, in order to strengthen research on climate change and ocean sciences, the School of Physics began a new Program of Physical Oceanography. The Department of Atmospheric Sciences was then renamed the Department of Atmospheric and Oceanic Sciences. In December 2009, Peking University approved the establishment of the Department of Atmospheric and Oceanic Sciences and established the "Laboratory for Climate and Ocean–Atmosphere Studies" (the document below declaring these changes was reissued in May 2010).

大气与海洋科学系成立揭牌
The establishment of the Department of Atmospheric and Oceanic Sciences

气候与海 - 气实验室成立揭牌
The establishment of the Laboratory for Climate and Ocean–Atmosphere Studies

教师队伍
Faculty team

截至 2019 年，大气与海洋科学系共有教职工 33 人，包括千人计划学者 2 人、杰青 3 人、优青 2 人、青年长江学者 1 人、青年千人学者 5 人。教师队伍中包含外籍教师 2 人。

As of 2019, the Department of Atmospheric and Oceanic Sciences has 33 faculty members, including 2 Thousand-Talent Scholar, 3 National Outstanding Young Scientists, 2 National Outstanding Junior Young Scientist, 1 Changjiang Young Scholar, and 5 Young Thousand-Talent Scholars. Two of our faculty members have foreign nationality.

教师 Faculty Members

傅宗玫
Tzung-May Fu

长聘副教授、优青、青年长江学者

（2010–2019 在北京大学任职）

台湾大学学士（2000），硕士（2002），
哈佛大学博士（2007）

研究方向：大气化学

Associate Professor with Tenure

BS(2000), National Taiwan University, Taiwan, China.

MS(2002), National Taiwan University, Taiwan, China.
PhD(2007), Harvard University, USA

Research Interests: Air pollution, atmospheric chemistry, and chemistry-climate interactions

付遵涛
Zuntao Fu

教授、副系主任

北京大学学士（1995），博士（1999）

研究方向：
大气动力学与非线性动力学

Professor and Vice Chair

BS(1995), Peking University, China.
PhD(1999), Peking University, China.

Research Interests: Atmospheric dynamics, climate variability and changes, atmospheric boundary-layer turbulence, time series analysis and applications in atmospheric sciences

北京大学
PEKING UNIVERSITY

胡永云
Yongyun Hu

教授、杰青、系主任

中山大学学士（1986），德州农工大学 A&M 硕士（1996），芝加哥大学博士（2000），华盛顿大学博士后（2000-2002），哥伦比亚大学博士后（2002-2004）

研究方向：
现代气候、古气候、行星气候

Professor and Chair

BS(1986), Sun Yat-sen University, China.
MS(1996), Texas A&M University, China.
PhD(2000), University of Chicago, USA
Postdoc(2000-2002),University of Washington, USA
Postdoc(2002-2004),NASA/GISS and Columbia University, USA

Research Interests: Present, Past, and Planetary climates

李成才
Chengcai Li

副教授、副系主任

北京大学学士（1991），硕士（1998），博士（2002）

研究方向：大气辐射与遥感

Associate Professor and Vice Chair

BS(1991), Peking University, China.
MS(1998), Peking University, China.
PhD(2002), Peking University, China.

Research Interests: Atmospheric aerosols, aerosol remote sensing by satellite and lidar, cloud properties and water vapor remote sensing, air pollution.

李 婧
Jing Li

助理教授、青年千人

北京大学学士（2006）、哥伦比亚大学博士（2011），美国宇航局戈达德空间研究所博士后（2011-2013）

研究方向：
大气辐射，气溶胶遥感与气候效应

Assistant Professor

BS(2006), Peking University, China.
PhD(2011), Columbia University, USA
Postdoc(2011-2013),NASA Goddard Institute for Space Studies, USA

Research Interests: Atmospheric Radiation, Remote Sensing, Aerosol Climate Effects, Global Climate Change, Air Pollution

李万彪
Wanbiao Li

副教授

北京大学学士（1989），硕士（1992），博士（1995）

研究方向：大气辐射与大气遥感，云物理与大气热力学

Associate Professor

BS(1989), Peking University, China.
MS(1992), Peking University, China.
PhD(1995), Peking University, China.

Research Interests: Atmospheric radiation, Atmospheric remote sensing

梁福明
Fuming Liang

讲师

北京大学学士（1987），硕士（1990），博士（2001）

研究方向：大气边界层与湍流 非线性大气动力学

lecturer

BS(1987), Peking University, China.
MS(1990), Peking University, China.
PhD(2001), Peking University, China.

Research Interests: Atmospheric Boundary Layer & Atmopheric Turbulence, Non-linear Atmospheric Dynamics

林金泰
Jintai Lin

长聘副教授、优青、青年拔尖

北京大学学士（2003），美国伊利诺伊大学厄巴纳-香槟分校博士（2008），哈佛大学博士后（2008-2010）

研究方向：大气化学、卫星遥感

Associate Professor with Tenure

BS(2003), Peking University, China.
PhD(2008), University of Illinois at Urbana-Champaign, USA
Postdoc(2008-2010),Harvard University, USA

Research Interests: Atmospheric chemistry, satellite remote sensing, chemical transport model, transboundary pollution, globalizing air pollution

刘晓阳
Xiaoyang Liu

副教授

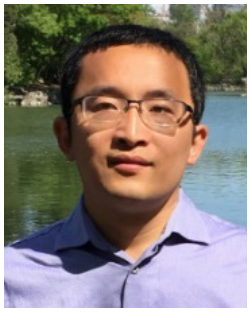
南京气象学院学士（1984），硕士（1991），北京大学博士（2001）

研究方向：大气探测和大气遥感

Associate Professor

BS(1984), Nanjing Institute of Meteorology, China
MS(1991), Nanjing Institute of Meteorology, China
PhD(2001), Peking University, China.

Research Interests: Active Remote Sensing, Water Vapor and Precipitation Sounding.



刘永岗
Yonggang Liu

助理教授、青年千人

北京大学学士（2000），硕士（2003），多伦多大学硕士（2004），多伦多大学博士（2011），普林斯顿大学博士后（2012-2015）

研究方向：
古气候、物理海洋、冰川动力学

Assistant Professor

BS(2000), Peking University, China.
MS(2003), Peking University, China.
MS(2004), University of Toronto, Canada
PhD(2011), University of Toronto, Canada
Postdoc(2012-2015,Princeton University, USA.

Research Interests: Paleoclimate, physical oceanography, glacier dynamics, sea level change

刘征宇
Zhengyu Liu

教授

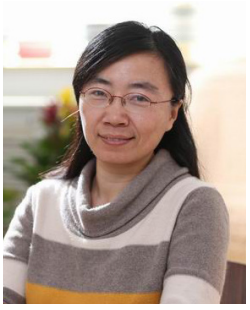
南京气象学院学士（1982），中国科学院大气物理研究所硕士（1985），麻省理工学院博士（1991），普林斯顿大学博士后（1991-1993）

研究方向：物理海洋学

Professor

BS(1982), Nanjing Institute of Meteorology, China
MS(1985), The Institute of Atmospheric Physics Chinese Academy of Sciences
PhD(1991), Massachusetts Institute of Technology, USA
Postdoc(1991-1993),Princeton University, USA

Research Interests: Paleoclimate, physical oceanography, climate prediction, data assimilation, Global climate change and global warming



孟智勇
Zhiyong Meng

教授、杰青、副系主任

北京大学学士（1991），中国气象科学研究院硕士（1994），德州农工大学 A&M 博士（2007）

研究方向：中小尺度气象学、资料同化、可预报性

Professor and Vice Chair

BS (1991), Peking University, China.
MS (1994), Chinese Academy of Meteorological Sciences, China
PhD (2007),Texas A&M University, China.

Research Interests: Atmospheric dynamics, predictability, data assimilation, ensemble forecasting, squall lines, supercells, tornadoes, tropical cyclones, severe and high-impact weather

聂 绩
Ji Nie

助理教授、青年千人

北京大学学士（2005），北京大学硕士（2008），哈佛大学博士（2013），哈佛大学博士后（2013-2014），哥伦比亚大学博士后（2014-2017）

研究方向：大气对流、大气动力学

Assistant Professor

BS(2005), Peking University, China.
MS(2008), Peking University, China.
PhD(2013), Harvard University, USA
Postdoc(2013-2014),Harvard University, USA
Postdoc(2014-2017),Columbia University, USA

Research Interests: Atmospheric Convection, Tropical meteorology, Atmospheric Dynamics

钱维宏
Weihong Qian

教授

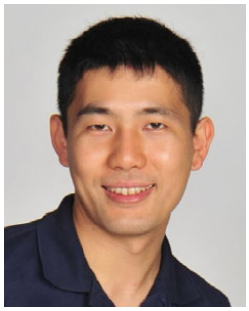
南京气象学院学士（1982），兰州大学博士（1994）

研究方向：季风，海气相互作用

Professor

BS(1982), Nanjing Institute of Meteorology, China
PhD(1994), Lanzhou University, China.

Research Interests: Monsoon, Weather extremes, Climatic anomalies



桑田幹哲
Mikinori Kuwata

助理教授、青年千人

日本东京大学学士（2004），硕士（2006），博士（2009），哈佛大学博士后（2009-2013）

研究方向：大气化学、大气气溶胶

Assistant Professor

BS(2004), Tokyo University, China.
MS(2006), Tokyo University, China.
PhD(2009), Tokyo University, USA
Postdoc(2009-2013),Harvard University, USA

Research Interests: atmospheric chemistry、atmospheric aerosol

谭本馗
Benkui Tan

教授

云南大学学士（1982），南京大学博士（1991）

研究方向：大气动力学、地球流体力学、大气中的非线性过程

Professor

BS(1982), Yunnan University, China
PhD(1991), Nanjing University, China.

Research Interests: Atmospheric Dynamics, Weather/Climate Dynamics, Atmospheric Teleconnection, Tropics-extratropics Interaction, Tropsphere-Stratosphere Coupling

王洪庆
Hongqing Wang

教授

西安电子科技大学学士（1985），山东大学硕士（1988），中国石油勘探开发研究所博士（1991）北京大学博士后（1991-1993）

研究方向：气象信息科学视算、气象资料处理与气象信息反演

Professor

BS(1985), XiDian University, China.
MS(1988), ShanDong University, China.
PhD(1991), Research Institute of Petroleum Exploration and Development, China
Postdoc(1991-1993), Peking University, China.

Research Interests: Severe convection weather, Satellite and Radar meteorology, Data Visualization, Scientific computation, Aviation hazardous weather

闻新宇
Xinyu Wen

副教授

北京大学学士（2002）、北京大学博士（2007），北卡罗莱纳州立大学博士后（2007-2009）

研究方向：气候变化，特别是东亚大气环流的变化、AGCM 的开发与应用、古气候模拟

Associate Professor

BS(2002), Peking University, China.
PhD(2007), Peking University, China.
Postdoc(2007-2009), North Carolina State University, USA

Research Interests: Climate change and modeling, Paleoclimate, Atmospheric circulation

萧 丹
Adam Showman

教授

斯坦福大学学士（1991），加州理工学院博士（1999），路易斯维尔大学（1999）博士后，美国航空航天局艾姆斯研究中心（1999-2001）博士后，

研究方向：行星科学

Professor

BS(1991), Stanford University, USA
PhD(1999), California Institute of Technology, USA
Postdoc(1999), University of Louisville, USA
Postdoc(1999-2001), NASA Ames Research Center, USA

Research Interests: Atmospheric dynamics, Atmospheric circulation, Hot Jupiters, Brown dwarfs

薛惠文
Huiwen Xue

教授

北京大学学士（1995）、美国宾夕法尼亚州立大学博士（2002），美国 NOAA 环境技术实验室博士后（2003-2006）

研究方向：
云物理，大气气溶胶，大气化学，气溶胶－云－气候的相互作用

Professor

BS(1995), Peking University, China.
PhD(2002), Penn State University, USA
Postdoc(2003-2006), NOAA Environmental Technology Laboratory, USA

Research Interests: Cloud physics, aerosol-cloud-climate interaction, boundary layer clouds, convective clouds, mixed-phase clouds, cloud condensation nuclei, ice nuclei

杨海军
Haijun Yang

教授、杰青

云南大学学士（1993），中国科学院兰州高原大气物理研究所硕士（1996），中国海洋大学博士（2000）

研究方向： 气候动力学、大尺度海－气相互作用、大洋环流

Professor

BS(1993), Yunnan University, China.
MS(1996), Lanzhou Institute of Plateau Atmospheric Physics, Chinese Academy of Science, China.
PhD(2000), Ocean University of Qingdao, China

Research Interests: Global climate change and global warming; Ocean-Atmosphere interaction; Oceanic thermocline and thermohaline circulation dynamics and modeling; Regional ocean dynamics, South China Sea circulation

杨 军
Jun Yang

助理教授

北京师范大学学士（2007），北京大学博士（2012），美国芝加哥大学博士后（2012–2015）

研究方向： 气候动力、系外行星、古气候、气候变化

Assistant Professor

BS(2007), Peking Normal University, China.
PhD(2012), Peking University, China.
Postdoc(2012-2015), University of Chicago, USA

Research Interests: Climate Dynamics, Exoplanets, Paleoclimate and Modern Climate Change of Earth

张宏升
Hongsheng Zhang

教授

北京大学学士（1986），硕士（1989），博士（1996）

研究方向： 大气物理学与大气环境

Professor

BS(1986), Peking University, China.
MS(1989), Peking University, China.
PhD(1996), Peking University, China.

Research Interests: Atmospheric Turbulence, Atmospheric Boundary Layer, Atmospheric Environment, Dust Emission, Land-surface Process, Air Pollution Meteorology

张 霖
Lin Zhang

长聘副教授、青年千人

北京大学学士（2004），哈佛大学博士（2009），哈佛大学博士后（2009–2010）

研究方向：大气化学

Associate Professor with Tenure

BS(2004), Peking University, China.
PhD(2009), Harvard University, USA
Postdoc(2009-2010), Harvard University, USA

Research Interests: Atmospheric chemistry, atmospheric environment, sources and sinks of air pollution, pollution transport, nitrogen deposition, climate-chemistry interactions, inverse modeling and adjoint model

张庆红
Qinghong Zhang

教授

北京大学学士（1989），硕士（1992），博士（1999），美国国家大气研究中心博士后（1999–2000）

研究方向：中尺度气象学

Professor

BS(1989), Peking University, China.
MS(1992), Peking University, China.
PhD(1999), Peking University, China.
Postdoc(1999-2000), NCAR, USA

Research Interests: high-impact weather (severe storm, tropical cyclone; dust storm); Synoptic and Mesoscale dynamics, predictability

张 焱
Yan Zhang

高级工程师

西安电子科技大学学士（1986），山东大学硕士（1991）

研究方向：气象资料信息处理研究

Senior Engineer

BS(1986), Xidian University, China.
MS(1991), Shandong University, China.

Research Interests: Research on meteorological data processing

赵春生
Chunsheng Zhao

教授

北京气象学院学士（1990），北京大学硕士（1993），博士（1996）
BS(1990),

研究方向：云物理与大气化学

Professor

Beijing Institute of Meteorology, China
MS(1993), Peking University, China.
PhD(1996), Peking University, China.

Research Interests: Cloud Physics, Aerosol, Cloud, Radiation, Precipitation Interactions, Atmospheric Physics, Atmospheric Chemistry

赵 强
Qiang Zhao

副教授

南京信息科技大学学士（1991），北京大学硕士（1994），博士（1997）
BS(1991),

研究方向：大气动力学

Associate Professor

Nanjing University of Information Sciences & Technology, China
MS(1994), Peking University, China.
PhD(1997), Peking University, China.

Research Interests: Geophysical Fluid Dynamics, Wave-Mean Interactions, ISO Dynamics, Delayed-Differential Equations & ENSO Dynamics

兼职教授 Adjunct professor

周秀骥 Xiuji Zhou

兼职教授、院士
Adjunct professor, Academician

吕达仁 Daren Lv

兼职教授、院士
Adjunct professor, Academician
Period：2009-2012

穆穆 Mu Mu

兼职教授、院士
Adjunct professor, Academician
Period：2010-2013

姚檀栋 Tandong Yao

兼职教授、院士
Adjunct professor, Academician
Period：2011-2014

石广玉 Guangyu Shi

兼职教授、院士
Adjunct professor, Academician
Period：2013-2016

北京大学
PEKING UNIVERSITY

客座教授 Guest Professor

Kuo-Nan Liou（廖国男）

Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles
Period: 1988-

Ola M.Johannessen

Nansen Environmental and Remote Sensing Center, Bergen, Norway
Period: 2008-2010

Ngar-Cheung Lau（刘雅章）

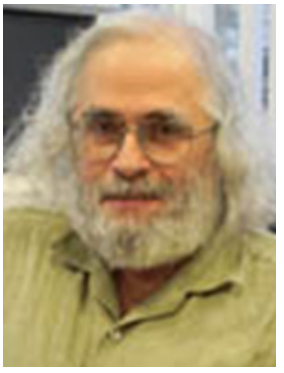
Chinese University of Hong Kong
Period: 2009-2011

John Michael Wallace

Department of Atmospheric Sciences, University of Washington
Period:2009-2011

Bin Wang（王斌）

Department of Meteorology, University of Hawaii
Period:2009-2011



Isaac Held

Geophysical Fluid Dynamics Laboratory, NOAA and Princeton University
Period: 2011-2013

James G. Anderson

Department of Earth and Planetary Sciences, Harvard University
Period:2014-2016

William K. M. Lau（刘家铭）

University of Maryland
Period:2016-2018

Yuk Ling Yung（翁玉林）

Division of Geological and Planetary Sciences, California Institute of Technology
Period:2016-2018

北京大学
PEKING UNIVERSITY

行政人员 Staff

杨 爽
Shuang Yang

教学管理
Education Administration

刘美景
Meijing Liu

科研管理
Scientific Administration

丁晶晶
Jingjing Ding

财务管理
Finance Administration

金钰佳
Yujia Jin

外事管理
Public Relations Administration

博士后 Postdoctor

Jamiu Adetayo

博士后

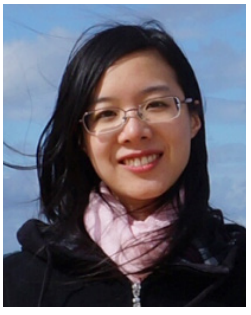
拉多克·阿金托拉理工大学学士（2006），博士（2014）

研究方向：排放清单核算与大气污染物传输

Postdoctor

BS: Ladoke Akintola University of Technology, Nigeria, 2006
PhD: Ladoke Akintola University of Technology, Nigeria, 2014

Research Interests: Emission Accounting, Air pollution Transport Modeling, Satellite Remote Sensing



戴攀曦
Panxi Dai

博士后

南京大学学士（2013），北京大学博士（2018）

研究方向：
大气动力学、极端降雨、气候变化

Postdoctor

BS(2013), Nanjing University, China.
PhD(2018), Peking University, China.

Research Interests: Atmospheric dynamics, extreme precipitation, climate variability and changes

杜鸣溪
Mingxi Du

博士后

西北农林科技大学学士（2014），博士（2018）

研究方向：
全球化大气污染与温室气体排放

Postdoctor

BS(2014), Northwest A&F University, China.
PhD(2018), Northwest A&F University, China.

Research Interests:
Trade and environment

管 健
Jian Guan

博士后

南京大学学士（2012），北京大学博士（2018）

研究方向：古气候变化，水同位素

Postdoctor

BS(2012), Nanjing University, China
PhD(2018), Peking University, China

Research Interests: Paleoclimate changes, Water isotope, Hydroclimatology

焦小淼
Xiaomiao Jiao

博士后

河南理工大学学士（2013），中国矿业大学（北京）博士 （2018）

研究方向：煤基能源产业结构对重要大气污染影响研究

Postdoctor

BS(2013), Henan Polytechnic University, China.
PhD(2018), China University of Mining & Technology, Beijing, China.

Research Interests: The impact of coal-based energy industry structure on major air pollution from the environmental perspective

金亦帅
Yishuai Jin

博士后

南京信息工程大学学士（2009），北京大学博士（2013）

研究方向：气候预报，海洋动力学

Postdoctor

BS(2009), Nanjing University of Information Science & Technology, China.
PhD(2013), Peking University, China.

Research Interests:
climate prediction, physical oceanography.

夏 炎
Yan Xia

博士后

北京大学学士（2008），博士（2014）

研究方向：
大气动力、大气辐射和气候变化

Postdoctor

BS(2008), Peking University, China.
PhD(2014), Peking University, China.

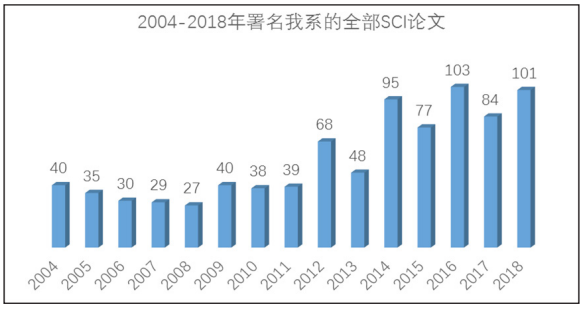
Research Interests:
Atmospheric dynamics, atmospheric radiation, climate variability and changes

科学研究
Research

目前，大气科学学科主要的研究方向有气象学、大气物理学与大气环境、气候学和物理海洋学。学科研究方向已从单一的气象学扩展到了大气物理、物理海洋，也扩展到了行星大气和地外生命。

本学科重点研究大气科学领域最基础、最前沿的科学问题，倡导在独立科研基础上的团队合作。近十年来，在国内外主流期刊发表署名我系的全部SCI论文693篇（包括PNAS、Nature、Nature Geoscience、Nature Climate Change、Nature Communication）。

近些年来，学科的科研经费也有稳步提升，2018年到账经费2585万元，人均经费达到100余万。

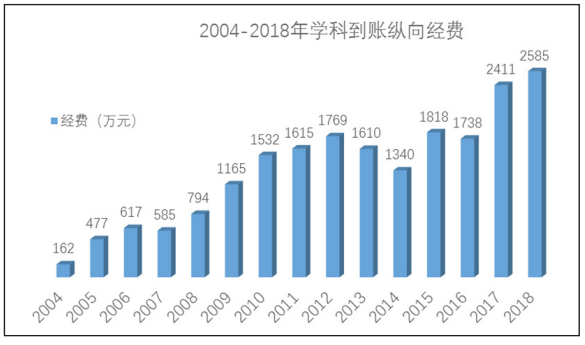


2004年以来，我系师生发表的论文
Papers published by our faculty and students since 2004.

Research at the Atmospheric Science Discipline at Peking University spans meteorology, atmospheric physics and atmospheric environment, climatology, and physical oceanography. The research fields have expanded from meteorology, to now cover atmospheric physics and physical oceanography, and further to planetary atmospheres and exoplanet habitability.

The discipline actively pursues fundamental and cutting-edge research, promotes multidisciplinary collaborations on the basis of independent research. In the past 10 years, our faculty members have published 693 SCI papers in leading international journals (including PNAS, Nature, Nature Geoscience, Nature Climate Change, and Nature Communication).

Research funding in the Atmospheric Science Discipline at Peking University has been increasing steadily in recent years. A total funding of 25.85 million RMB was received in 2018, and the average annual funding reached over 1 million RMB per faculty.

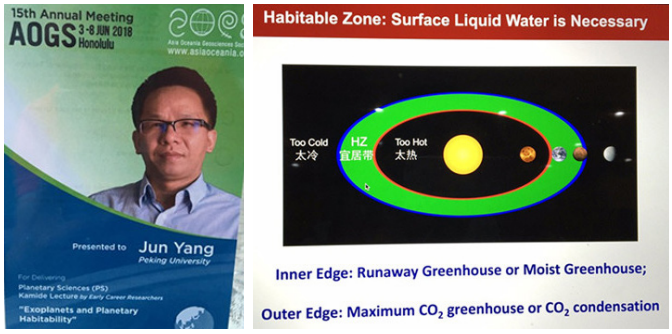


2004年以来，我系纵向科研经费，单位：万元
Research funding since 2004 (Unit: 10000 RMB)

本学科在大气化学、行星大气、古气候、强对流天气等方向做出了极具创新性的科研成果，在国际上产生了广泛影响。

The Atmospheric Science Discipline at Peking University has led innovative research in fields such as atmospheric chemistry, planetary atmospheres, paleoclimate, and deep convection, and so on, which have resulted in large and broad international influences.

林金泰荣获美国地球物理学会全球环境变化 Early Career Award
Jintai Lin received the American Geophysical Union Early Career Award



杨军应邀作“Kamide 青年科学家”大会报告
Jun Yang was invited to give the “Kamide Young Scientist” lecture

人才培养
Education

本学科是我国高校中唯一的大气科学一级重点学科；拥有两个二级重点学科（气象学、大气物理学与大气环境），自设两个二级学科（气候学、物理海洋学），强调各学科方向的均衡发展。1993 年，被第一批确定为“国家理科基础科学研究和教学人才培养基地－大气科学基地”。

截至 2019 年 5 月，本学科在读本科生 32 名，研究生 122 名，包括博士生 95 名，硕士生 27 名。北京大学大气科学学科学生的培养目标是，培养大气科学和相关学科的领军人才。

The Atmospheric Science Discipline at Peking University is the only first-tier focal discipline in atmospheric sciences in Chinese universities. It has two second-tier focal disciplines (meteorology, atmospheric physics and atmospheric environment), and two more second-tier disciplines (climatology and physical oceanography). In 1993, the discipline was selected in the first group of “National Natural Science Basic Scientific Research and Teaching Training Base - Atmospheric Science Base”.

Currently (May 2019), the Atmospheric Science Discipline at Peking University has 32 undergraduate students, 122 graduate students, including 95 PhD students, and 27 master students. The goal of the education programs of the Atmospheric Science Discipline is to cultivate leaders in the discipline and relative fields.

2008 级本科毕业生合影
Graduation photo of the Class of 2008 undergraduate students

2016 届博士、硕士毕业生合影
Graduation photo of the Class of 2016 Ph.D. and master students

北京大学
PEKING UNIVERSITY

国际合作与交流

International Collaborations and Exchanges

2010 年 3 月，美国科学院院士华盛顿大学教授 Wallace 访问北大，被授予北京大学客座教授。王恩哥院长为其佩戴北京大学校徽

In March 2010, Professor Wallace from the University of Washington, member of the US National Academy of Sciences, visited Peking University and was conferred Honorary Professor. Professor Enge Wang, Dean of the School of Physics at that time, presented the university insignia to him.

国际学术交流是学科走向国际一流和培养具有国际视野的青年人才的重要方面。近年来学科大大加强了与国际名校的交流，与哈佛大学、芝加哥大学、加州理工学院、加州大学洛杉矶分校签订了学生互访和科研合作协议。每年有大批海外学者来访，我系教师也应邀到国际名校访问。

2017 年，与哈佛大学地球与行星科学系签订了科研和学生交流合作协议，并于 2017 年夏季共同举办了为期一周的“北京大学－哈佛大学气候与环境暑期学校”，有来自欧美和国内的 200 多名研究生和本科生参加，哈佛大学有 6 位教授和 20 名研究生参加。

International collaborations are an important aspect for the discipline to become world-class and to cultivate young professionals with global perspectives. In recent years, the PKU Atmospheric Science Discipline is highly active in collaborations with world-leading universities. The Discipline has signed mutual agreements with Harvard University, the University of Chicago, California Institute of Technology, and University of California, Los Angeles for students exchange and research collaborations. Every year, the Discipline hosts and invites a great number of international visitors. Our faculty members have also been invited to visit world-leading universities and institutes.

In 2017, the discipline signed mutual agreement with the Department of Earth and Planetary Sciences of Harvard University for the Collaborative of Environment and Climate (CEC) in research and education. And in summer 2017, we jointly hosted a one-week international summer school “Peking University – Harvard University 2017 Graduate Summer School on Climate, Weather, Pollution & Health Consequences”. Over two hundred graduate and undergraduate students from Chinese/foreign universities and institutes participated. 6 professors and 20 graduate students from Harvard University participated.

2011 年，美国科学院院士 Held 访问北大并做特邀报告，王恩哥校长为其颁发客座教授聘书
In 2011, Professor Held, member of the US National Academy of Sciences visited Peking University. Professor Enge Wang, President of Peking University at that time presented him the Honorary Professorship certificate

2013 年，美国科学院院士、哈佛大学 Anderson 教授应邀做“物理百年讲坛”特邀报告。胡永云教授代表物理学院向其颁发奖牌
In 2013, Professor Anderson from Harvard University, member of the US National Academy of Sciences, was invited to give a “Physics Centennial Forum” lecture. Professor Yongyun Hu presented the lecture medal to him.

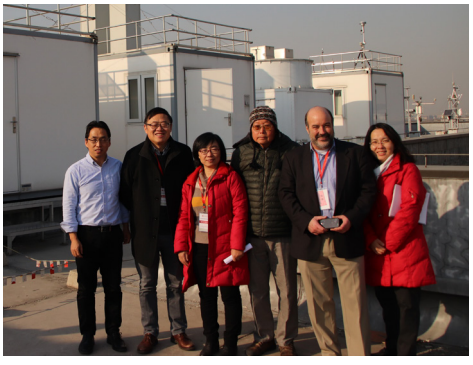
回顾这 90 年的历史，一代又一代教师们的开创、守望和耕耘铸造了北大大气科学学科的辉煌。他们贡献给学科的不仅是知识和学术的传承，还有他们为人师表的言传身教。毕业生们也真正做到了以北大大气学科为荣，学科以他们的成就为骄傲，师生们共同谱写了这 90 年华丽的篇章。展望未来，培养具有国际竞争力的优秀人才，做出原创性的科研成果，为早日建成世界一流大气科学学科而努力是我们新的奋斗目标。

Looking through its 90-year history, the creation, perseverance, and cultivation by generations of teachers have created the glory of the Discipline of Atmospheric Sciences in Peking University. They contributed to the Discipline not only by passing on knowledge and scholarship, but also by their words and deeds. The graduates are truly proud of the Discipline at Peking University, and the Discipline is proud of their achievements in turn. The teachers and students have written a gorgeous chapter of its 90 years. Looking into the future, we endeavor to educate outstanding talents with international competitiveness, conduct original scientific research, and strive for the establishment of a world-class Discipline of Atmospheric Sciences.

2012 年，芝加哥大学 Pierrehumbert 教授应邀做特邀报告，物理学院本科生向其展示赠送礼品
In 2012, Professor Pierrehumbert from the University of Chicago was invited to give a distinguished lecture. The undergraduate students in the School of Physics presented a gift to him.

2015 年 12 月 22 日，美国科学院院士 Hansen 教授来访，并做特邀报告
On 22 December 2015, Professor Hansen, member of the US National Academy of Sciences, visited and gave a distinguished lecture

2013 年，美国科学院院士、哈佛大学 Anderson 教授应邀做“物理百年讲坛”特邀报告。胡永云教授代表物理学院向其颁发奖牌
In 2013, Professor Anderson from Harvard University, member of the US National Academy of Sciences, was invited to give a “Physics Centennial Forum” lecture. Professor Yongyun Hu presented the lecture medal to him.



2018 年北京大学物理领域国际同行评议，专家参观楼顶观测仪器
International peer review of School of Physics in 2018. International experts visited observation instruments on the roof of the Physics Building.

2017 年北京大学 - 哈佛大学气候和大气环境变化联合暑期学校
Peking University – Harvard University 2017 Graduate Summer School on Climate, Weather, Pollution & Health Consequences

学生风采

Students

两院院士校友

Academician Alumni

两院院士校友
Academician Alumni

90年来，大气科学学科培养了一大批优秀人才，他们分布在海内外、教育、学术、管理等岗位，仅从北大大气科学学科走出的中国科学院和中国工程院院士20人。

For ninety years, the Atmospheric Science Discipline of Peking University has educated a large number of talents, including twenty academicians of the Chinese Academy of Sciences and the Chinese Academy of Engineering. They work in academic and leadership positions all over the world.

(1907–1968)

赵九章 Jeou-jang Jaw

1938–1944年在西南联大任教，1955年当选为中国科学院院士（学部委员）。对大气科学、地球物理学和空间科学的发展做出了卓越贡献，是倡导和开拓中国地球科学数学物理化和新技术化的先驱。

Academician Jaw taught at the Southwestern Associated University during the period of 1938-1944. In 1955, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). He made great contributions to the development of atmospheric science, geophysics, and space science in China and was a pioneer in the promotion of fundamental mathematics and physics in earth sciences and the application of new technology.

(1914–1997)

程纯枢 Chunshu Cheng

1936 年毕业于清华大学地学系气象专业。1980 年当选为中国科学院院士（学部委员）。从事气候学、应用气象研究。早期从事天气预报业务研究工作，1949 年后在从事气象业务技术领导工作的同时，致力于大气探测、气候资源及农业气象等方面的研究，并带领和指导开拓这方面业务服务和研究的领域。

Academician Cheng graduated from the Department of Meteorology of Tsinghua University in 1936. In 1980, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). He engaged in research in climatology and applied meteorology. In his early years, he engaged in research on weather forecasting services. After 1949, he worked as a technical leader of meteorological services and devoted himself to research on atmospheric exploration, climate resources, and agrometeorology. He led and guided the development of services and research in these fields as well.

(1906–1962)

涂长望 Changwang Tu

1935 年借聘到清华大学地理系任教 1 年。我国现代气象事业奠基人之一，1955 年当选为中国科学院院士（学部委员）。在长期预报、农业气候、霜冻预测、长江水文预测、气候与人体健康、气候与河川水文关系等气象领域均有杰出成果。

In 1935, Academician Tu was hired to teach in the Department of Geography of Tsinghua University for one year. He was among the founders of the modern meteorological service in China and was elected as an academician of the Chinese Academy of Sciences (member of the academic division) in 1955. He made outstanding achievements in various aspects of meteorology, such as long-term forecasting, agrometeorology, frost forecasting, hydrological prediction in the Yangtze River area, the relationship of climate and human health, and the relationship of climate and river hydrology.

(1917–1995)

谢义炳 Yiping Hsieh

1940年毕业于西南联合大学地质地理气象系气象专业。1980年当选为中国科学院院士（学部委员）。20世纪50年代首先发现东亚上空多层锋区、急流分支和副热带高空急流。60年代首先发现西太平洋大多数台风发生在赤道辐合带上并有中期过程，提出“台风群”概念和切变不稳定理论。70年代提出中低纬度天气系统概念模式、湿斜压大气概念和系统理论。在该理论的指导下，北方暴雨科研协作组开发了一系列暴雨的天气动力学诊断方法，设计了用于降水预报的数值模式，使80年代我国北方暴雨预报准确率有了显著提高。80年代提出空间不稳定性概念，鉴定了传统的斜压行星波不稳定性理论和判据。从事大气大型涡旋与基本气流的关系的研究，提出指数循环动力学理论，对中国天气分析和预报起到指导作用。

In 1940, Academician Hsieh graduated from the Department of Meteorology, Geology, and Geography of Southwestern Associated University. In 1980, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). In the 1950s, he was the first to discover multilayer fronts, jet branches, and subtropical high-altitude jets over East Asia. In the 1960s, he revealed that most of the typhoons in the western Pacific occurred in the equatorial convergence zone and had a medium-term process and proposed the concept of a "typhoon group" and the theory of shear instability. In the 1970s, he proposed a conceptual model of the mid-low latitude weather system and the concept and systematical theory of the wet baroclinic atmosphere. Under the guidance of this theory, the Northern Rainstorm Research Collaboration Group developed a series of weather dynamics diagnostic methods for heavy rain and designed a numerical model for precipitation forecasting that significantly improved the accuracy of rainstorm forecasting in northern China in the 1980s. In the 1980s, he proposed the concept of spatial instability and identified the criteria of the traditional theory of baroclinic planetary wave instability. Engaged in the study of the relationship between atmospheric large vortexes and the basic airflow, he proposed the dynamical theory of the exponential cycle, which plays a guiding role in weather analysis and forecasting in China.

(1916–2013)

叶笃正 Tu-Cheng Yeh

1940 年毕业于西南联合大学地质地理气象系气象专业。1980 年当选为中国科学院院士（学部委员）。从事大气环流和长波动力学研究，提出长波能量频散理论；20 世纪 50 年代，提出青藏高原在夏季是热源的见解，由此开拓了大地形热力作用研究和青藏高原气象学；提出北半球大气环流季节性突变并引发一系列研究；60 年代对大气风场和气压场的适应理论做出重要贡献；70 年代后期，从事地－气关系和倡导全球变化研究。

In 1940, Academician Yeh graduated from the Department of Meteorology, Geology, and Geography of Southwestern Associated University. In 1980, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). Engaged in the study of atmospheric circulation and longwave dynamics, he proposed the longwave energy dispersion theory. In the 1950s, he revealed that the Qinghai-Tibet Plateau was a heat source in the summer, which opened up the study of the thermal effects of large terrain and the meteorology of the Qinghai-Tibet Plateau. He proposed a seasonal mutation in the atmospheric circulation in the Northern Hemisphere that inspired a series of later studies. In the 1960s, he made great contributions to the theory of adaption of atmospheric wind and pressure fields. In the late 1970s, he dedicated himself to research on the land-air relationship and advocated global change research.

(1929–)

赵柏林 Bolin Zhao

1951年毕业于清华大学气象系。1991年当选为中国科学院院士（学部委员）。进行了人类首次乘气球入云测量云中电荷。研制多频微波辐射计系列，建成大气遥感站，用以监测天气变化研制雷达与微波辐射计测雨系统，提高了测雨精度建立微波遥感地物实验室，研究遥感水面油污和土壤湿度，用于环境遥感。建立光学遥感气溶胶和二氧化氮的新方法，利用卫星遥感得出东亚大气尘暴的分布和总量。建成低空大气遥感系统在海洋进行观测，受到国际上的重视。建立卫星遥感海洋大气新的反演方法，在实践中取得效益。在世界气候研究计划(WCRP)中，研究云辐射对气候的影响和在气候变化中能量与水分循环的作用。

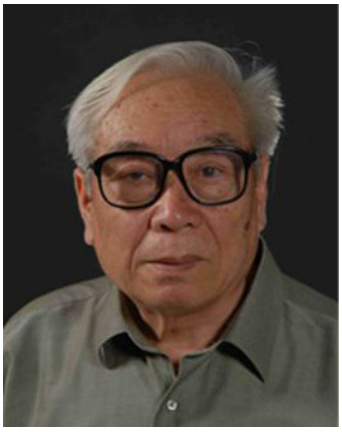
Academician Zhao graduated from the Department of Meteorology of Tsinghua University in 1951. In 1991, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). For the first time, he took a balloon into a cloud to measure the charge in the cloud. He developed a series of multifrequency microwave radiometers and built an atmospheric remote sensing station to monitor weather changes. He developed radar and microwave radiometer systems that improved the accuracy of rain measurement. He established a microwave remote sensing laboratory, performing the remote sensing of oil pollution in water surface and soil moisture and other types of environmental remote sensing. He proposed a new method for the optical remote sensing of aerosols and nitrogen dioxide and obtained the distribution of East Asian atmospheric dust storms by satellite remote sensing. He set up a low-altitude atmospheric remote sensing system for observation in the ocean that received international attention. He established a new retrieval algorithm for the satellite remote sensing of the ocean atmosphere that achieved benefits in practice. He also took part in the World Climate Research Program (WCRP), studying the effects of cloud radiation on the climate and the role of energy and water cycles in climate change.

(1933–2013)

黄润乾 Runqian Huang

1951 年考入清华大学气象系， 1953 年由国家选派赴德国席勒大学天体物理专业学习，1999 年当选为中国科学院院士。从事恒星物理研究，并致力于研究“有物质损失、有转动效应的双星结构和演化理论”，先后建立了有物质损失和角动量损失的双星非守恒演化理论、建立了有转动效应的双星演化理论，并建立了碰撞星风激波理论，为恒星结构和演化理论的发展做出了重要贡献。

In 1951, Academician Huang was admitted to the Department of Meteorology of Tsinghua University. In 1953, he was selected by the State to study in the Department of Astrophysics of Schiller University in Germany. In 1999, he was elected as an academician of the Chinese Academy of Sciences. Engaged in stellar physics research, he devoted himself to the study of "double-star structure and evolution theory with material loss and rotational effect" and successively established theories of the nonconservative evolution of a double-star system with material loss and angular momentum loss, the evolution of a double-star system with rotational effects, and collision stellar wind shock waves. He made great contributions to the development of the theories of stellar structure and evolution.



(1932–)

任阵海 Zhenhai Ren

1955年毕业于北京大学物理系气象专业。1995年当选为中国工程院院士。从事大气环境的检测与治理的理论与工程应用，以及气候变化对环境影响的研究。提出了大气环境容量理论，解决了环境规划、污染控制的难点。首次揭示了中国与跨国大气输送宏观规律，创立了大气环境资源背景场。

In 1955, Academician Ren graduated from the Department of Physics as a major in meteorology. In 1995, he was elected as an academician of the Chinese Academy of Engineering. He engaged in theoretical studies and engineering applications for atmospheric environment detection and management and studied the impact of climate change on the environment. He proposed the theory of the atmospheric environmental capacity to solve difficulties in environmental planning and pollution control. He was the first to reveal the general laws of transboundary atmospheric transport for China and propose the concept of the background of atmospheric environment.

(1935–)

曾庆存 Qingcun Zeng

1956年毕业于北京大学物理系气象专业。1980年当选为中国科学院院士（学部委员）。首创半隐式差分法，在数值天气预报、气候预测和地球流体力学中广泛应用，提出计算地球流体力学、大气运动适应过程和演变过程理论，建立大气遥感的“最佳信息层”理论和“自然控制论”，为卫星遥感通道的选择提供了重要指引。

In 1956, Academician Zeng graduated from the Department of Physics as a major in meteorology. In 1980, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). He was the first to propose the semi-implicit difference method, which is widely used in numerical weather prediction, climate prediction, and earth fluid mechanics. He proposed the calculation of earth fluid mechanics and the theory of the atmospheric motion adaptation process and evolution process. He established the theory of the "best information layer" and "natural cybernetics" of atmospheric remote sensing, which provides important guidance for the selection of satellite remote sensing channels.

(1934–)

丑纪范 Jifan Chou

1956 年毕业于北京大学物理系气象专业。1993 年当选为中国科学院院士（学部委员）。20 世纪 60 年代首先将变分法和泛函分析引入到数值天气预报，提出的理论和方法比国外同类工作早近 10 年。70 年代论证准地转模式大气温压场的演变与下垫面热状况的等价性，将正问题和反问题结合起来，提出由历史资料反求大气要素和参数使之与长期预报模式相匹配的方法。用最新颖的数学方法揭示大气动力学方程组的整体和全局行为，得到最好的结果。80 年代起研究大气动力学长期演变的渐进性质，得到在特定情况下大气动力算子向外源的非线性适应特性，不仅对指导长期预报有重要意义，在国际偏微分方程研究方面也有出色贡献。

In 1956, Academician Chou graduated from the Department of Physics as a major in meteorology. In 1993, he was elected as an academician of the Chinese Academy of Sciences (member of the academic division). In the 1960s, he was the first to introduce the variational method and functional analysis into numerical weather prediction. His proposed theories and methods were nearly 10 years ahead of similar works abroad. In the 1970s, he demonstrated the equivalence of the evolution of the atmospheric temperature and pressure fields and the thermal condition of the underlying surface in quasi-ground mode. He proposed to use historical data to retrieve atmospheric elements and parameters to make them consistent with a long-term forecasting model. He applied new mathematical methods to reveal the local and global characteristics of the atmospheric dynamics equations, and the best results were obtained. In the 1980s, he studied the gradual nature of the long-term evolution of atmospheric dynamics and obtained the nonlinear adaptive characteristics to the external source of the atmospheric dynamic operator under certain conditions. These are important for guiding long-term prediction, and also represent great contributions to the study of partial differential equations internationally.

(1932–)

周秀骥 Xiuji Zhou

1952–1956 年在北京大学物理系气象专业学习。 1991 年当选为中国科学院院士（学部委员）。主要从事大气物理、大气遥感和大气环境研究。20 世纪 60 年代系统地建立了暖云降水起伏理论。率先开展中国大气电学研究。系统地开展了大气光学与微波遥感理论与实验观测研究，领导研制成中国第一台气象激光雷达和 UHF 多普勒测风雷达，建成京津冀灾害性天气监测、超短期预报系统以及强风暴实验室。在区域气候与环境变化研究中取得重要成果。

During the period of 1952-1956, Academician Zhou completed the meteorological program in the Department of Physics of Peking University. In 1991, he was elected an academician of the Chinese Academy of Sciences (member of the academic division). He mainly engaged in research on atmospheric physics, atmospheric remote sensing, and the atmospheric environment. In the 1960s, he systematically established a theory of warm cloud precipitation fluctuation. He also took the lead in conducting research on atmospheric electricity in China. Theoretical research and experimental observations of atmospheric optics and microwave remote sensing were systematically carried out under his guidance. The first meteorological laser radar and UHF Doppler wind radar in China were developed under his leadership. He also established the Beijing-Tianjin-Hebei severe weather monitoring, ultra-short-term forecasting systems, and the strong storm laboratory. He accomplished great achievements in regional climate and environmental change research.

(1935–)

龚知本 Zhiben Gong

1960 年毕业于北京大学地球物理系气象专业。2003 年当选为中国工程院院士。从事大气光学及其工程应用研究，是我国应用大气光学主要开拓者。在激光大气传输及其校正、激光大气探测和高分辨率大气吸收光谱等方面的研究工作做出了重要贡献，并推进了大气光学学科的发展。

In 1960, Academician Gong graduated from the Department of Geophysics as a major in meteorology. In 2003, he was elected as an academician of the Chinese Academy of Engineering. He engaged in atmospheric optics and engineering applications research and was the main pioneer in the application of atmospheric optics in China. He has made important contributions to research on laser atmospheric transmission and its correction, laser atmospheric detection, and the high-resolution atmospheric absorption spectrum. He has promoted the development of atmospheric optics as well.

(1935–)

李泽椿 Zechun Li

1962 年毕业于北京大学地球物理系气象学专业，1965 年北京大学地球物理系研究生毕业。1995 年当选为中国工程院院士。从事大气科学工程化的天气预报和数值天气预报业务系统工程建设和科研工作。创建了中国第一个数值天气预报业务系统，建立了国家级中、短期数值天气预报的业务体系。。

Academician Li graduated from the Department of Geophysics of Peking University in 1962 and continued to be a graduate student there until graduating in 1965. In 1995, he was elected an academician of the Chinese Academy of Engineering. He engaged in engineering construction and research work of weather forecasting and numerical weather forecasting systems. He created China's first numerical weather forecasting service system and established the national-level medium- and short-term numerical weather forecasting system.

(1940–)

吕达仁 Daren Lv

1962年毕业于北京大学地球物理系气象学专业，2005年当选为中国科学院院士。一直在大气与地球系统科学前沿从事基础与高技术研究。首先提出微波主－被动联合遥感降水分布的原理及反演方法。最早提出消光－小角散射综合反演大气气溶胶粒子谱的原理。主持完成我国首部VHF平流层大型相控阵雷达。对重力波频谱结构、对流风暴激发重力波机制作了系统研究。

In 1962, Academician Lv graduated from the Department of Geophysics as a major in meteorology. In 2005, he was elected an academician of the Chinese Academy of Sciences (member of the academic division). He dedicated his career to basic and high-tech research at the frontier of atmospheric and earth system science. He was the first to propose the principle and retrieval method of the active-passive combined microwave remote sensing of precipitation distribution. He was also the first to propose the principle of the comprehensive retrieval of the atmospheric aerosol particle spectrum by extinction-small angle scattering. He was in charge of the construction of China's first large VHF stratospheric phased-array radar. The spectral structure of gravity waves and the mechanism of convective storm triggered gravity waves are systematically studied by him.

(1938–)

丁一汇 Yihui Ding

1963年毕业于北京大学地球物理系气象学专业。2005年当选中国工程院院士。从事季风动力学，灾害性天气以及候变化研究工作。在气候变化、亚洲季风以及中国的灾害性天气气候方面做出有理论意义和实用价值的创造性研究成果，为推动中国的气象业务发展作出了重要的贡献。

In 1963, Academician Ding graduated from the Department of Geophysics as a major in meteorology. In 2005, he was elected an academician of the Chinese Academy of Engineering. He engaged in research on monsoon dynamics, severe weather, and climate change. He has made valuable achievements in research on climate change, Asian monsoons, and China's severe weather and contributed greatly to the development of China's meteorological research and services.

(1942–)

黄荣辉 Ronghui Huang

1965 年毕业于北京大学地球物理系天气动力专业。1991 年当选为中国科学院院士。对大气中准定常行星波形成、传播和异常机理进行了系统研究，提出了准定常行星波在球面三维大气中的传播理论，证明了球面大气行星波的波作用守恒与 Nitta 同时发现热带西太平洋暖池热状态及暖池上空对流活动对东亚夏季大气环流与气候异常起着重要作用，提出了影响中国夏季气候的大气环流的遥相关型及其理论。近年来致力于亚洲季风与 ENSO 循环相互作用和气候灾害机理的研究。

In 1965, Academician Huang graduated from the Department of Geophysics as a major in synoptic dynamics. In 1991, he was elected as an academician of the Chinese Academy of Sciences. He conducted a systematic study on the formation, propagation, and anomaly mechanism of quasi-stationary planetary waves in the atmosphere. He proposed the propagation theory of quasi-stationary planetary waves in the spherical three-dimensional atmosphere and proved the wave action conservation of spherical planetary waves. He discovered, simultaneously with Nitta, the thermal state of the tropical western Pacific warm pool and showed that convection over the warm pool played an important role in the atmospheric circulation and climate anomalies over East Asia in the summer. He proposed the teleconnection concept and its theory of atmospheric circulation affecting China's summer climate. In recent years, He has been devoted to the study of the interaction between the Asian monsoon and ENSO cycle and the mechanism of climate disasters.

汪景琇 Jingxiu Wang

(1944–)

1969年毕业于北京大学地球物理系天气动力专业。2013年当选为中国科学院院士。长期从事太阳磁场和太阳活动研究。与合作者系统地提出了对太阳向量磁场研究的方法、概念和表征量，定量描述太阳活动区磁能积累过程；发现活动区磁剪切具有总体规则性，对活动区磁螺度最早给出定量估计；由向量磁场观测，发现太阳低层大气中磁重联存在的证据，提出太阳活动中存在两阶段磁重联的思想；通过前所未有的定量测量，提出太阳网络内磁场是区别于黑子和网络磁场的内禀弱磁场分量，对太阳总磁通量有重要贡献。

In 1969, Academician Wang graduated from the Department of Geophysics as a major in synoptic dynamics. In 2013, he was elected as an academician of the Chinese Academy of Sciences. He has long been engaged in solar magnetic field and solar activity research. With his collaborators, he systematically proposed the concept, analysis methods, and characterization of the solar magnetic field, and then quantitatively described the magnetic energy accumulation process in the solar active area. He found that there is an overall regularity in the magnetic shear of the active area and was the first to quantitatively estimate the magnetic helicity of the active area. Based on the observation of the vector magnetic field, he found evidence of the existence of magnetic reconnection in the lower atmosphere of the sun and proposed the idea of a two-stage magnetic reconnection in solar activity. Through unprecedented quantitative measurements, he proposed that the magnetic field in the solar network is different from the sunspots and the network magnetic fields, actually being an intrinsic component of the weak magnetic field that contributes significantly to the total magnetic flux of sun.

(1946–)

金亚秋 Yaqiu Jin

1970 年毕业于北京大学地球物理系大气物理专业。2011 年当选为中国科学院院士。长期从事复杂自然环境与目标电磁散射、辐射传输和空间微波遥感定量信息技术领域的研究，提出了自然地表全极化电磁散射的理论建模、数值与成像模拟、特征参数反演与目标重构，形成了“空间微波遥感全极化电磁散射与定量信息”的系统理论；发展了“自然介质矢量辐射传输理论”、及其在地球环境星载微波遥感、探月与深空探测等领域的应用；发展了“复杂背景环境与特征目标复合电磁散射”的理论建模、数值模拟的计算电磁新方法。

In 1970, Academician Jin graduated from the Department of Geophysics of Peking University as a major in atmospheric physics. In 2011, he was elected as an academician of the Chinese Academy of Sciences. He has been engaged in research on the complex natural environment and target electromagnetic scattering and radiation transmission and spatial microwave remote sensing quantitative information technology. He proposed the theoretical modeling, numerical and imaging simulation, feature parameter retrieval, and target reconstruction of natural surface full-polarized electromagnetic scattering. He also contributed to the system theory of "full-polarized electromagnetic scattering and quantitative information of space microwave remote sensing". He developed the "natural medium vector radiation transmission theory" and its applications in earth environment satellite-borne microwave remote sensing, lunar exploration, and deep space exploration. He developed a theoretical model for the electromagnetic scattering of a complex background environment and target and a new method for its numerical simulation.

(1943–)

吴国雄 Guoxiong Wu

1974年4月—1975年8月，在北京大学地球物理系数值预报进修班学习。1997年当选为中国科学院院士。提出湿倾斜涡度发展理论(SVD)和全型垂直涡度方程，揭示青藏高原西南涡和夏季江淮流域的暴雨发展机理以及副热带高压形态变异成因。把亚洲季风爆发分为三个阶段，证明由于中高纬度的强地转性和斜压性使其海气相互作用特征与热带显著不同。用数值模式提出厄尔尼诺影响台风的机制。在天气和气候领域取得了系统性、创造性的成果。

From April 1974 to August 1975, Academician Wu studied numerical prediction in the Department of Geophysics of Peking University. In 1997, he was elected as an academician of the Chinese Academy of Sciences. The wet slope vorticity development theory (SVD) and the full-type vertical vorticity equation were proposed by him to reveal the rainstorm development mechanism of the southwest vortex of the Qinghai-Tibet Plateau and Jianghuai Basin in the summer and the morphological variation of the subtropical high. He divided the Asian monsoon explosion into three stages and proved that the characteristics of the air-sea interaction are significantly different from those in the tropics due to the strong geostrophic and baroclinic properties at mid-high latitudes. He also proposed the mechanism of El Niño's impacts on typhoons using a numerical model. He achieved systematic and creative results in weather and climate research.

(1964–)

王会军 Huijun Wang

1986 年毕业于北京大学地球物理系天气动力专业。2013 年当选为中国科学院院士。长期从事古气候模拟、气候变化和气候预测理论等方面的研究。把古今气候研究结合起来，对东亚气候变化研究做出重要贡献，揭示了东亚夏季风在 1970 年代末的减弱；揭示了南极涛动、Hadley 环流、北大西洋涛动等对东亚气候的显著影响；完成了我国首个基于自己气候模式的全球变暖定量模拟结果；提出热带相似和年际增量气候预测思想和方法，显著提高了东亚气候和台风活动的气候预测水平。

In 1986, Academician Wang graduated from the Department of Geophysics and majored in synoptic dynamics. In 2013, he was elected as an academician of the Chinese Academy of Sciences. He has been engaged in research on paleoclimate simulation, climate change, and climate prediction theory. By combining studies on ancient and modern climates, he made great contributions to East Asian climate change research. He revealed the weakening of the East Asian summer monsoon in the late 1970s and the significant impacts of the Antarctic Oscillation, Hadley Circulation, and North Atlantic Oscillation on the East Asian climate. He accomplished China's first quantitative simulation of global warming based on its own climate model. He proposed the ideas and methods of tropical similarity and interannual incremental climate prediction, which significantly improved the prediction accuracy of East Asian climate and typhoon activity.

学科（系）历届负责人

Discipline (Department) Leaders

北京大学
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学科（系）历届负责人
Discipline (Department) Leaders

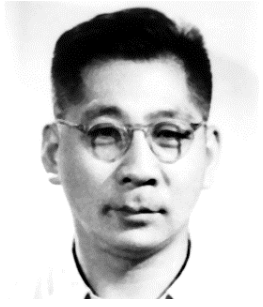
黄厦千
Xiaqian Huang

李宪之
Sjan-Zsi Li

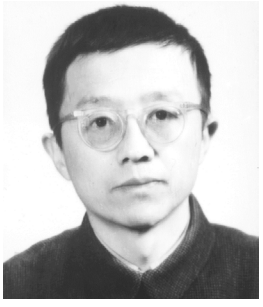
赵九章
Jeou-jang Jaw

叶企孙
Chi-Sun Yeh

谢义炳
Yiping Hsieh



苏士文
Shiwen Su



刘式达
Shida Liu

黄嘉佑
Jiayou Huang

李万彪
Wanbiao Li

谭本馗
Benkui Tan

胡永云
Yongyun Hu

1929-1934

清华大学地理系（1932 年地理系改名地学系）气象组负责人：黄厦千

Director of the Meteorology program in the Department of Geography (renamed Department of Geosciences) at Tsinghua University: Xiaqian Huang

1936-1945

清华大学地学系、西南联合大学地质、地理、气象系气象组负责人：李宪之

Director of the Meteorology program in the Department of Geosciences at Tsinghua University and the Department of Geology, Geography and Meteorology at National Southwestern Associated University: Sjan-Zsi Li

1946-1948

清华大学气象系系主任：赵九章（李宪之代理系主任（1946-1947）、叶企孙代理系主任（1948））

Director of the Department of Meteorology at Tsinghua University: Jeou-jang Jaw (Acting directors: Sjan-Zsi Li (1946-1947), Chi-Sun Yeh (1948))

1949-1951

清华大学气象系系主任：李宪之

副主任：谢义炳（1950-1951）

Director of the Department of Meteorology at Tsinghua University: Sjan-Zsi Li

Deputy Director: Yiping Hsieh (1950-1951)

1952-1958

北京大学物理系副系主任：谢义炳（气象专业负责人）

Deputy Director of the Department of Physics at Peking University: Yiping Hsieh (Director of the Meteorology Program)

1959-1966

北京大学地球物理系 系主任：苏世文

副主任：谢义炳、殷宗昭

Department of Geophysics at Peking University

Director: Shiwen Su

Deputy Directors: Yiping Hsieh, Zongzhao Yin

1978-1986

系主任：谢义炳

副主任：邢骏、刘余滨、张荫春、臧绍先

Director: Yiping Hsieh

Deputy Directors: Jun Xing, Yubin Liu, Yinchun Zhang, Shaoxian Zang

1986-1993

系主任：刘式达

副主任：臧绍先、张镡、钱景奎

Director: Shida Liu

Deputy Directors: Shaoxian Zang, Tan Zhang, Jingkui Qian

1993-1996

系主任：刘式达

副主任：卢咸池、彭欣荣、蔡荣华

Director: Shida Liu

Deputy Directors: Xianchi Lu, Xinrong Peng, Ronghua Cai

1996-2001

系主任：黄嘉佑

副主任：焦维新、陈晓非、于超美、彭欣荣（97.7 调走）

Director: Jiayou Huang

Deputy Directors: Weixin Jiao, Xiaofei Chen, Chaomei Yu, Xinrong Peng (left in July 1997)

2001-2003

系主任：李万彪

副主任：朱锦红

Director: Wanbiao Li

Deputy Director: Jinhong Zhu

Director: Benkui Tan

Deputy Directors: Wanbiao Li (2004-2005), Jinhong Zhu (2004-2005, acted by Qinghong Zhang)

Deputy Directors: Shuhua Liu (2006-2009), Qinghong Zhang (2006-2009)

2004-2009

系主任：谭本馗

副主任：李万彪（2004-2005）、朱锦红（2004-2005，张庆红代理）

副主任：刘树华（2006-2009）、张庆红（2006-2009）

Director: Benkui Tan

Deputy Directors: Wanbiao Li (2004-2005), Jinhong Zhu (2004-2005, acted by Qinghong Zhang)

Deputy Directors: Shuhua Liu (2006-2009), Qinghong Zhang (2006-2009)

2010- 至今

系主任：胡永云

副主任：张庆红（2010-2014）、刘晓阳（2010-2015）

副主任：孟智勇（2014- 至今）、付遵涛（2015- 至今）、李成才（2015- 至今）

Director: Yongyun Hu

Deputy Directors: Qinghong Zhang (20010-2014), Xiaoyang Liu (2010-2015)

Deputy Directors: Zhiyong Meng (2014-), Zuntao Fu (2015-), Chengcai Li (2015-)

展望未来，北大大气科学学科现在站在新的历史起点上，培养优秀人才、做出创新性的科研成果、服务国家需求、为世界大气科学事业做出贡献是我们新的奋斗目标。我们将牢记90年历史的重托，继往开来、勇攀高峰。

The Discipline of Atmospheric Sciences at Peking University is now standing at the beginning of its new history. Looking into the future, we endeavor to educate great talents, conduct innovative research, serve the needs of our Nation, and contribute to the advancements of atmospheric sciences. We will act, instead of talk, and we will be true to our heritage as we scale new heights.

自由严谨 求实创新

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