

合作与交流 Cooperation and Communication



2018年1月5日，气科院院长端义宏一行5人应邀访问了美国国家海洋和大气管理局（NOAA）海洋大气研究办公室（OAR）以及美国天气局国家环境预报中心（NCEP），双方就组织机构运行、科技成果转化政策以及大气科学研究的重点领域进行了交流。

On 5 January 2018, a five-member delegation led by CAMS President, Dr. Duan Yihong, visited the Office of Oceanic & Atmospheric Research (OAR) and National Center for Environmental Prediction (NCEP) under the US National Oceanic

and Atmospheric Administration (NOAA). The two sides exchanged ideas with regards to organizational structure and operation, policies on scientific research outcomes transformation, as well as key research areas in atmospheric science.



2018年3月11日，美国阿拉斯加大学大气科学系及国际北极研究中心张向东教授和美国缅因大学气候变化研究所主任Paul Mayewski教授应邀访问极地气象研究室，并分别做了题为“快速变化的北极气候系统和北极圈-中纬度气候与天气关联性”和“快速气候变化”的学术报告。张向东教授介绍了近几年国际北极气候快速变化及其与中纬度地区气候变化关联性研究的最新进展。Paul Mayewski教授阐述了研究气候突变事件的意义，展示了气候分析工具Climate Reanalyzer和激光+ICPMS冰芯分析仪的功能及其应用。丁明虎和张东启主持了报告会。

On 11 March 2018, Prof. Zhang Xiangdong from Department of Atmospheric Sciences of US University of Alaska as well as International Arctic Research Center, together with Prof. Paul Mayewski, Director of Climate Change Institute of US University of Maine, visited Institute of Tibetan Plateau and Polar Meteorology (ITPP) and delivered academic presentations themed “Rapidly Changing Arctic Climate System and Arctic-Mid latitude Climate and Weather Linkage” and “Abrupt Climate Change” respectively. Prof. Zhang Xiangdong introduced the latest international research development regarding rapidly changing climate in Arctic and its correlation with the climate change in mid-latitude areas over the recent years. Prof. Paul Mayewski explained the implications of studying abrupt climate change events. He also showed the functions and applications of climate analysis tool, Climate Reanalyzer, and laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) system. The presentations were presided over by Ding Minghu and Zhang Dongqi.



2018年3月19—21日，由气科院和中国气象局广州热带海洋气象研究所联合举办的国际大气多尺度关键技术研讨会在广州召开。与会专家就全球模式、强对流研究最新进展、高分辨率模拟、华南暴雨及观测技术等议题进行了报告交流。来自德国马普气象研究所、德国气象局汉斯厄特尔气象中心、东京大学以及国内近60位相关学者参加了会议。

On 19–21 March 2018, the International Workshop on Key Technologies for Multi-scale Modeling of Atmospheric Processes was held in Guangzhou, China, co-sponsored by CAMS as well as CMA Guangzhou Institute of Tropical and Marine Meteorology. The participating experts delivered presentations and exchanged thoughts over a number of agenda items including global modeling, advances in convection processes modeling, high-resolution simulation, rainstorms in South China and observation technologies, etc. Over 60 domestic and overseas scholars in related fields attended the workshop, including those from Max Planck Institute for Meteorology in Germany, the Hans-Ertel-Centre for Weather Research of DWD in Germany and Tokyo University in Japan.

2018年4月20日，阿联酋国家气象中心Rashed Al Shehhi先生一行3人访问了中国气象局人工影响天气中心。人影中心实验室副主任楼小凤接待了代表团。楼小凤、蔡森和苏正军分别介绍了我国人工影响天气的总体情况、人影业务流程和任务以及室内实验等情况，并就阿方感兴趣的人工增雨技术、地面燃烧炉和人工增雨催化剂等方面进行了交流。



On 20 April 2018, a three-member delegation led by Mr. Rashed Al Shehhi from UAE's National Centre for Meteorology visited CMA Weather Modification Centre (WMC). Ms. Lou Xiaofeng, Deputy Director of WMC Laboratory, hosted visit of the delegation. Lou Xiaofeng, Cai Miao and Su Zhengjun introduced respectively the general information of weather modification work in China, operational processes and tasks, as well as laboratory experiment, etc. Discussions were also held about rain enhancement technologies, ground-based AgI generator and seeding agent.



2018年4月26日，日本国立环境研究所Daisuke Goto博士访问气科院，并做了题为“利用半区域模型、地球同步卫星和实测数据理解日本的跨界空气污染：以2016年5月为例”的学术报告。Daisuke Goto博士介绍了日本地区的跨界空气污染及其观测手段，比较了不同模式的模拟结果和观测的差异，重点介绍了耦合了非静力二十面体高精度大气模式（NICAM, Non-hydrostatic Icosahedral Atmospheric Model）的半区域气溶胶传输模式模拟结果。报告会由张华研究员主持。

On 26 April 2018, Dr. Daisuke Goto from National Institute of Environmental Studies, Japan, visited CAMS and delivered an academic presentation titled “Understanding the Transboundary Air Pollution to Japan Using a Semi-Regional Model, a Geostationary Satellite and in Situ Measurements: A Case Study of May 2016”. Dr. Daisuke Goto introduced transboundary air pollution in Japan and its observation means, with comparison of the differences among outputs from multi-models and observations, focusing on the semi-region aerosol transmission modeling output by non-hydrostatic icosahedral atmospheric model (NICAM). The presentation was presided over by Dr. Zhang Hua, CAMS Researcher.

2018年6月12日，加利福尼亚州立大学洛杉矶分校Dennis Patrick Lettenmaier院士应邀访问气科院，并做了题为“陆气耦合预测中相关陆面模拟的机遇和挑战”的学术报告。Lettenmaier院士介绍了美国地区干旱的模拟和预测，详细阐述了如何利用土壤水分预测干旱，介绍了VIC陆面模式在青藏高原地区的发展及其与Noah-MP陆面模式模拟结果的对比等内容。报告会由灾害天气重点实验室主任梁旭东研究员主持。



On 12 June 2018, Prof. Dennis Patrick Lettenmaier, a U.S. NAE (National Academy of Engineering)

Member from California State University, Los Angeles, paid an invited visit to CAMS and delivered an academic presentation titled “Opportunities and challenges in land surface modeling related to coupled land-atmosphere prediction”. Prof. Lettenmaier introduced the modeling and prediction of drought in U.S.A. and elaborated in detail how to predict drought by soil moisture. He also introduced the development of VIC Land Surface Model in Tibetan Plateau and its comparison with the modeling output of Noah-MP Land Surface Model. The presentation was presided over by Dr. Liang Xudong, Director of CAMS State Key Laboratory of Severe Weather (LASW) and Researcher.



2018年7月6日，美国夏威夷大学王斌教授应邀访问气科院，并做了题为“亚洲季风对北极海冰模态的影响及可预报性”的学术报告。王斌教授首先介绍了夏季北极海冰年际变化的规律特征，并且指出东亚夏季风和印度夏季风的强弱变化能够影响滞后1~2月的北极海冰变化。报告会由祝从文研究员主持。

On 6 July 2018, Prof. Wang Bin from U.S. Hawaii University paid an invited visit to CAMS and delivered an academic presentation titled “Summer Arctic sea ice patterns driven by Asian monsoon

and its predictability”. He introduced the features of inter-annual variation of summer Arctic sea ice and indicated that the intensity variation of East Asian Summer Monsoon and Indian Summer Monsoon could cast impact over Arctic sea ice lagging one to two months after. The presentation was presided over by Dr. Zhu Congwen, CAMS Researcher.

2018年7月6日，美国国家海洋和大气管理局（NOAA）与科罗拉多大学合作环境科学研究所（CIRES）的资深科学家Owen Cooper博士应邀访问气科院，并做了题为“对流层臭氧评估报告：全社会共同努力对快速变化世界的对流层臭氧进行量化”的学术报告。国际全球大气化学计划（IGAC）等组织于2014年共同发起了首次对流层臭氧评估报告（TOAR）的撰写工作。来自36个国家的220余名科学家经过几年努力，基本完成了这项重要的科学评估工作。气科院徐晓斌研究员参加了此项评估工作。



On 6 July 2018, Dr. Owen Cooper, a senior scientist from Cooperative Institute for Research in Environmental Sciences (CIRES) which is a partnership of NOAA and U.S. Colorado University, paid an invited visit to CAMS and delivered an academic presentation titled “the Tropospheric Ozone Assessment Report (TOAR): A Community-Wide Effort to Quantify Tropospheric Ozone in a Rapidly Changing World”. Several organizations including the International Global Atmospheric Chemistry Project (IGAC) jointly launched the drafting of TOAR in 2014. With efforts of over 220 scientists from 36 countries in nearly five years, the scientific assessment for TOAR was basically completed. Dr. Xu Xiaobin, CAMS Researcher, participated in relevant assessment work.

2018年7月16日，美国国家海洋和大气管理局（NOAA）大西洋海洋和气象实验室（AOML）飓风研究所边界层和海气相互作用观测试验首席科学家张俊博士访问灾害天气国家重点实验室，并做了题为“利用飞机数据改进飓风模型物理参数”的学术报告。张俊博士介绍了美国基于飞机探测数据改进台风模式物理过程的若干进展。来自气科院、国家气象中心、国家卫星气象中心等单位的学者和研究生参加了报告会，报告会由徐晶研究员主持。



On 16 July 2018, Dr. Zhang Jun visited LASW and delivered an academic presentation titled “Improving Hurricane Model Physics Using Aircraft Data”. Dr. Zhang Jun is the Chief Scientist of observation experiment of interaction between boundary layer and ocean-atmosphere in the Hurricane Institute of Atlantic Oceanographic and Meteorological Laboratory (AOML) of NOAA. In the presentation, he introduced the progresses achieved for improved physical processes of typhoon models based on airborne sounding data in the US. Researchers and graduated students from CMA institutions including CAMS, National Meteorological Centre, National Satellite Meteorological Centre, etc. attended the presentation, which was presided over by Dr. Xu Jing, CAMS Researcher.



2018年7月20日，美国纽约州立大学刘骥平教授应邀访问极地气象研究室，并做了题为“北极海冰的可预测性和预测”的学术报告。刘骥平教授首先介绍了利用融池和冰间水道预测北极海冰面积的可行性以及利用耦合模式并同化观测资料预测海冰密集度和海冰厚度的研究成果。报告会由丁明虎副研究员主持。

On 20 July 2018, Prof. Liu Jiping from U.S. New York State University paid an invited visit to ITPP, and delivered an academic presentation titled “Arctic Sea Ice Predictability and Prediction”. He introduced the practicability of melting ponds, lakes and ice lanes on the prediction of Arctic sea ice area, and assimilated these observed data into coupled model to predict Arctic sea ice concentration and thickness. This presentation was presided over by Dr. Ding Minghu, CAMS Associate Researcher.



2018年8月20日，美国大气海洋管理局(NOAA)、马里兰大学、乔治梅森大学的资深科学家Daniel Tong博士应邀访问气科院，并做了题为“空气质量预报的进展：卫星时代如何保护人类健康”的学术报告。Daniel Tong博士介绍了利用卫星排放数据同化、化学数据同化和偏差校正进行空气质量预测的研究进展等，指出了空气质量、人类健康和气候之间的联系。报告由王亚强研究员主持。

On 20 August 2018, Dr. Daniel Tong, a senior scientist from NOAA, U.S. Maryland University, and U.S. George Mason University, paid an invited visit to CAMS and delivered an academic presentation titled “Advances in Air Quality Forecasting: Protect Human Health in the Satellite Era”. Dr. Daniel Tong introduced relevant research progress in air quality prediction on the basis of satellite assimilation of emission data, chemical data and bias correction. The presentation was presided over by Dr. Wang Yaqiang, CAMS Researcher.

2018年8月30日，德国联邦教育和研究部(BMBF)代表团访问中国气象局，期间与气科院就“季风气候变化”主题进行了研讨。BMBF全球变化分部主管Rene Haak教授和端义宏院长分别介绍了BMBF以及气科院的基本情况。中方李建研究员等、德方Ulrike Burkhardt博士等分别就模式模拟、高分辨率云和降水(HD(CP)2)项目、超级计算资源等问题进行了介绍。双方就关注的关键科学问题、合作的内容等方面进行了磋商。



On 30 August 2018, BMBF delegation from Germany visited CMA when a themed discussion between BMBF and CAMS on “Monsoon Climate Change” was held. Prof. Rene Haak from BMBF responsible for global change and Dr. Duan Yihong, CAMS President, briefed on BMBF and CAMS respectively. Dr. Li Jian, CAMS Researcher and Dr. Ulrike Burkhardt from BMBF, as well as other scientists, presented relevant topics on modeling, high-resolution cloud and precipitation projects (HD(CP)2), super computing resources, etc. Exchange of ideas was conducted over key scientific issues and content of potential cooperation.



2018年8月下旬，德国约翰内斯古腾堡大学的Michael Riemer Johannes博士访问气科院，并做了题为“高影响天气的可预测性和过程:德国W2W (Waves to Weather) 联合研究中心的贡献”的学术报告。W2W 计划是WMO正在执行的高影响天气研究计划中的重要组成部分，该计划由德国研究基金会资助，旨在建立一个可预报性、大气动力学和云领域基础研究的跨学科平台。报告会由王玉清教授主持。

In late August 2018, Dr. Michael Riemer Johannes from Gutenberg University of Germany visited CAMS and delivered an academic presentation titled “Predictability and Processes of High-Impact Weather: WMO’s HIWeather Project and the German Contribution Waves to Weather”. The Waves to Weather (W2W) project is an important part of WMO’s High Impact Weather Research Project which is on-going. The project is sponsored by German Research Foundation and aims at establishing a cross- disciplinary platform of predictability, atmospheric dynamics and cloud. The presentation was presided over by Prof. Wang Yuqing of CAMS.

2018年10月10日，俄罗斯农业气象专家Aleksandr Dmitrievich Kleshchenko教授应邀在“生态气象遥感”论坛做报告。Kleshchenko教授通过“农业对俄罗斯当前及未来需求的支撑”“作物生长状况业务监测”和“干旱监测”3个专题报告介绍了俄罗斯农业气象研究发展的现状、农业气象科研业务为农业生产提供卫星遥感监测预警等保障服务，重点介绍了他们基于生物气候潜力（BCP）发展的“Climate-Soil-Yield”数值模拟系统及其应用。报告会由周广胜研究员主持。



On 10 October 2018, Prof. Aleksandr Dmitrievich Kleshchenko, Russian agrometeorological expert, delivered invited presentations on the “Workshop on Remote-sensing of Ecological Meteorology”. By three themed presentations on “Agriculture Support Requirements Now and in the Nearest Future in Russia”, “Crop State Operational Monitoring” and “Drought Monitoring”, Prof. Kleshchenko introduced the research progress of agrometeorology in Russia including agrometeorological service of satellite remote-sensing monitoring and warning for agriculture activities, with a focus on the “Climate-Soil-Yield” numerical modeling system based on bioclimatic potential (BCP) development as well as its application. The presentations were presided over by Prof. Zhou Guangsheng, Vice President and Researcher of CAMS.



2018年10月12日，美国艾奥瓦大学王俊教授应邀在“大气成分与天气气候论坛”做学术报告。王俊教授系统介绍了气溶胶卫星和地基遥感反演发展的历史过程、存在的主要问题，重点介绍了水汽吸收在海岸线区域气溶胶反演中的应用等研究成果。报告会由车慧正研究员主持。

On 12 October 2018, Prof. Wang Jun from U.S. Iowa University delivered an academic presentation on “Workshop on Atmospheric Composition and Weather & Climate” held by

CAMS. Prof. Wang gave a systematic introduction over the retrieval development processes and key problems of aerosol satellite and ground based remote-sensing, with a focus on the application of vapor absorption over aerosol retrieval in coastal areas. The presentation was presided over by Dr. Che Huizheng, CAMS Researcher.

2018年11月7日，英国气象局首席业务官、WMO英国常任代表菲利普·埃文斯一行4人在中国气象局余勇副局长陪同下访问气科院。李建研究员介绍了气科院的基本情况、研究内容和国际合作情况，并对中英气象科学合作、特别是模式研究进展进行了详细汇报。双方就模式研究、农业气象和社会经济等问题进行交流讨论。端义宏院长主持接待。

On 7 November 2018, a four-member UK delegation visited CAMS, which is led by Mr. Philip Evans, Chief Operation Officer of UK Met Office and Permanent Representative of UK with WMO, in the accompany of Dr. Yu Yong, CMA Deputy Administrator and other officials. Dr. Li Jian, CAMS Researcher, introduced CAMS' research and international activities, and elaborated in detail over the modeling research cooperation between CMA and Met Office. Discussions on model development, agrometeorology as well as social and economic concerns were held. Dr. Duan Yihong, CAMS President, hosted the visit.



HIWeather Workshop(20-22Nov2018,Beijing)



2018年11月20—22日，由气科院承办的WMO高影响天气国际研讨会暨国际协调办公室成立仪式在北京召开。世界天气研究计划（WWRP）科学指导委员会主席Sarah Jones教授等WMO官员、中国气象局副局长宇如聪、气科院院长端义宏等出席开幕式。来自中国、德国、英国、美国、加拿大等国的70余位专家学者就高影响天气预报预警研究进展、存在的差距和未来计划等进行了研讨。

On 20–22 November 2018, the High-Impact Weather Workshop (i.e. Establishment of HIWeather International Coordinating Office) was held in Beijing by CAMS. Prof. Sarah Jones, President of the Scientific Steering Committee of WMO World Weather Research Program (WWRP), Dr. Yu Rucong, CMA Deputy Administrator, and Dr. Duan Yihong, CAMS President, etc. attended the opening ceremony. Over 70 scientists from China, Germany, UK, USA, and Canada, etc. participated in the workshop and exchange thoughts on research progress in high-impact weather forecasts and warnings, gaps and future plans.



2018年11月23日，德国亥姆霍兹学会吉斯达赫特材料与海岸研究中心谢志永博士应邀访问气科院，并做了题为“新型持久性有机污染物（POPs）在海洋和极地环境中的空间分布与界面交换机制”的学术报告。谢志永博士介绍了POPs的种类、毒性、来源、研究方法和现状以及在大西洋和北极环境中的空间分布和地球化学循环机制。报告会由丁明虎副研究员主持。

On 23 November 2018, Dr. Xie Zhiyong from Helmholtz-Zentrum Geesthacht Centre for Materials

and Coastal Research GmbH Institute of Coastal Research paid an invited visit to CAMS and delivered an academic presentation titled “Persistent Organic Pollutions(POPs) in the Ocean and Polar Environment—Spatial Distribution and Geochemical Cycling Processes”. Dr. Xie introduced the classification, toxicity, origin, research methods and current status of POPs as well as their spatial distribution in Atlantic and Arctic environment and the chemical cycling in the earth. The presentation was presided over by Dr. Ding Minghu, CAMS Associate Professor.



2018年11月26日，乌干达国家气象局培训和研究处处长Teddy Tindamanyire女士与财务和行政处处长Alex Rutafa先生一行2人访问气科院并参观了大气化学重点实验室。王亚强所长向来宾介绍了气科院的概况，以及气科院在大气化学科学研究、大气成分综合观测系统应用等方面的研究现状。

On 26 November 2018, a two-member Uganda National Meteorological Authority (NUMA) delegation visited CAMS and the Key Laboratory of Atmospheric Chemistry (KLAC), including Ms. Teddy Tindamanyire,

Director of Training and Research and Mr. Alex Rutafa, Director of Finance and Administration. Dr. Wang Yaqiang, Director of KLAC, introduced about CAMS and the atmospheric chemistry research, as well as integrated observations of atmospheric application, etc.



2018年11月29—30日，第4次中韩双边研讨会在气科院召开。端义宏院长、韩国国立气象研究所（NIMS）所长Sang Won Joo以及双方相关专家学者参加了研讨会。会议回顾了合作项目执行情况，讨论确定了空气质量、东亚天气气候变化变率、人工影响天气、高影响灾害性天气研究等未来4个合作方面。12位专家在研讨会上交流了学术报告。

On 29–30 November 2018, the Fourth CAMS-NIMS Joint Research Workshop was held at CAMS. Dr. Duan Yihong, CAMS President, Mr. Sang Won Joo, President of National Institute of Meteorological Sciences (NIMS), Korea, as well as scientists from both sides attended the workshop. The participants reviewed cooperation progresses between the two institutions, and confirmed future cooperation in four areas including air quality, weather and climate variation and variability in East Asia, weather modification, high-impact severe weather research. 12 experts delivered academic presentations for the workshop.