

**Congratulation to the 70th
Anniversary of A.M. Obukhov
Institute of Atmospheric
Physics, Russian Academy of
Sciences**

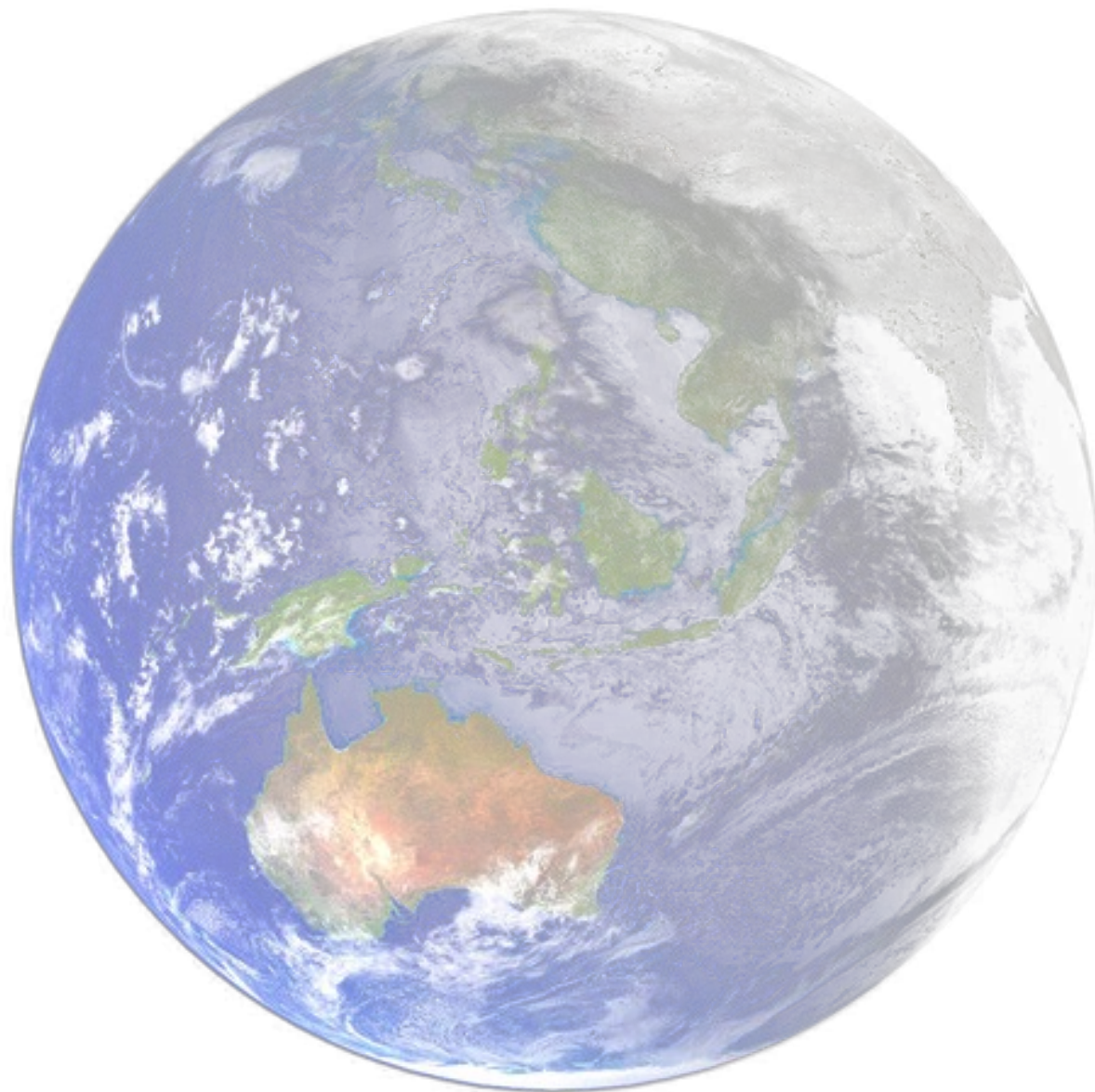
Institute of Atmospheric Physics, Chinese Academy of Sciences

Dabang Jiang



中国科学院大气物理研究所

Institute of Atmospheric Physics, Chinese Academy of Sciences



OUTLINE

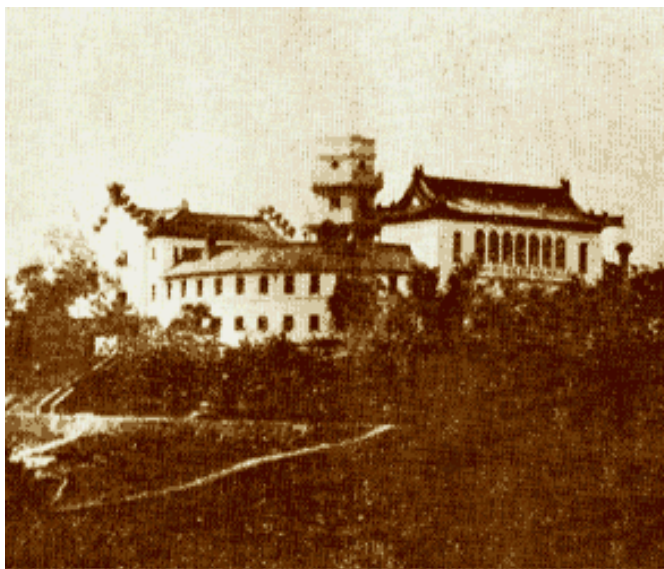
► **Brief of IAP**

International Cooperation

Three Research Priorities



History of IAP



1928 Institute of Meteorology

Nanjing (1928) -> Hankou (1937) -> Chongqing (1938) ->
Nanjing (1946) -> Shanghai (1948) -> Nanjing (1949)

1950 Institute of Geophysics and Meteorology (officially named as)

Nanjing (1950) -> Beijing (1951)

1966 Institute of Atmospheric Physics, CAS

1949

Weather forecast

1960s

Air pollution

1980s

Numerical simulation and
forecasting

21st Century

Climate Change
Earth System Modeling

1928

Established as one of the six earliest
institutions engaged in modern natural
science researches in China

1950s

Cloud physics
Numerical weather forecasting

1970s

Satellite Meteorology
Atmospheric remote sensing

1990s

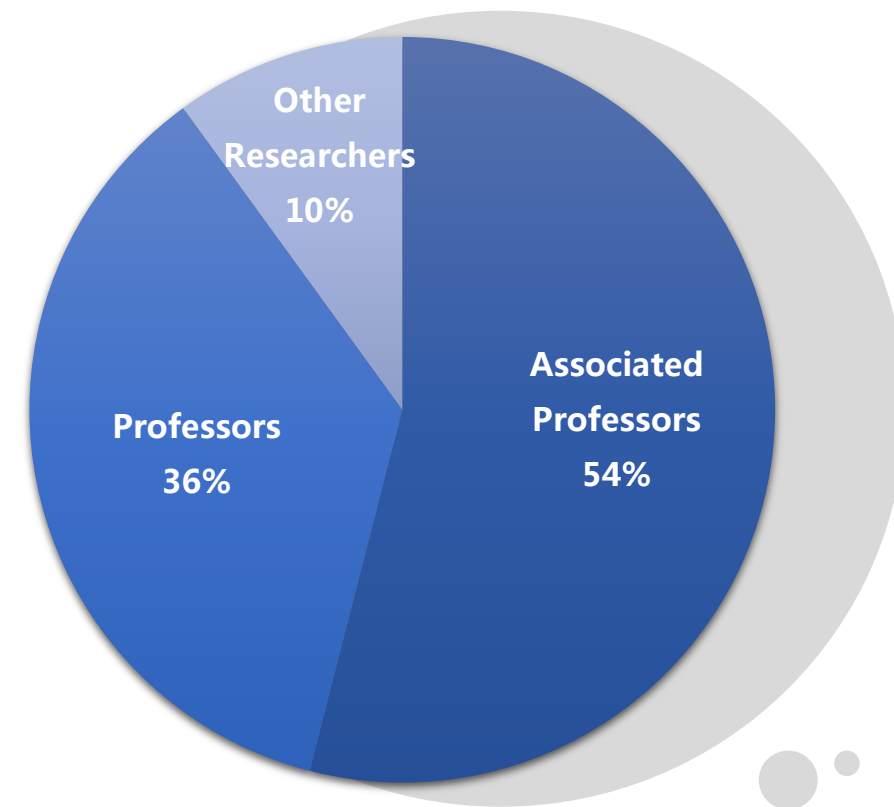
Climate prediction



Personnel Structure of IAP

- There are **495 staffs** in IAP, of which the proportion of researchers is 80%. The number of full research professors is 142 including 5 CAS academicians.
- IAP is one of the first CAS institutes that are qualified to grant a master's or doctoral degree approved by the Academic Degrees Committee of the State Council.
- There are **537** graduate students.

CAS Academicians	5
The World Academy of Sciences	1
International Academy for Eurasia	2
Winner of the National Top Science and Technology Award	2



Associated Professors	54%
Professors	36%
Other Researchers	10%



Structure of IAP

Academic Committee

IAP

Degree Committee

Research Divisions

Management Divisions

Supporting System

State Key Laboratory
of Atmospheric
Environment and
Extreme Meteorology
(AEEM)

State Key Laboratory
of Earth System
Numerical Modeling
and Application
(labESM)

The Earth System
Science Numerical
Simulator Facility
(EarthLab)

Laboratory of
Atmospheric Boundary
Layer (LAPC)

Laboratory of
Atmospheric and
Oceanic Dynamics
(LAOD)

International Center
for Climate and
Environment Sciences
(ICCES)

Center for Monsoon
System Research
(CMSR)

START Regional
Center for Temperate
East Asia (RCE-TEA)

Sub-Center of
Atmospheric
Sciences, Chinese
Ecosystem Research
Network(SCAS-CERN)

Laboratory of Cloud-
Precipitation Physics
and Severe Storms
(LACS)

Nansen-Zhu
International Research
Center (NZC)

Laboratory for Middle
Atmosphere and
Global Environment
Observation(LAGEO)

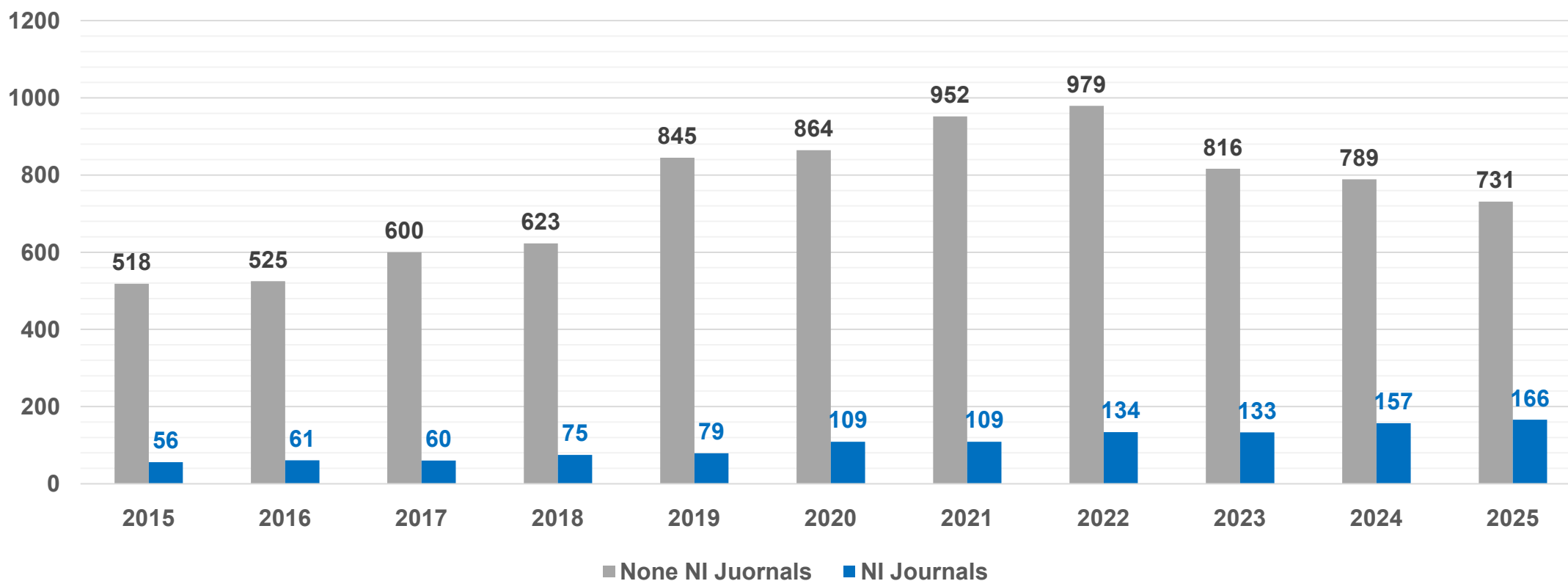
- Administrative Office
- Scientific Planning Division
- Human Resource Division
- Graduate Division
- Assets Management Division
- Finance Division
- Huairou Science City Office

- Public Technical Supporting Center
- Editorial Division (4 Journals)
- Huainan Technology Transform Base
- Atmospheric Observations (9)



IAP Publications

SCI Publications (2015-2025)



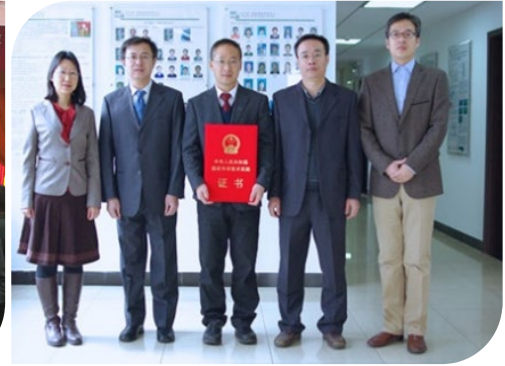


International Appointments & Awards

45	International Academic Committee Members	ICS, WCRP, GEO, IAMAS, Future Earth, etc.
82	Editorial board of International Journals	JGR-Atmospheres, Journal of Climate, AGU Advances, etc.

180 Domestic and International awards

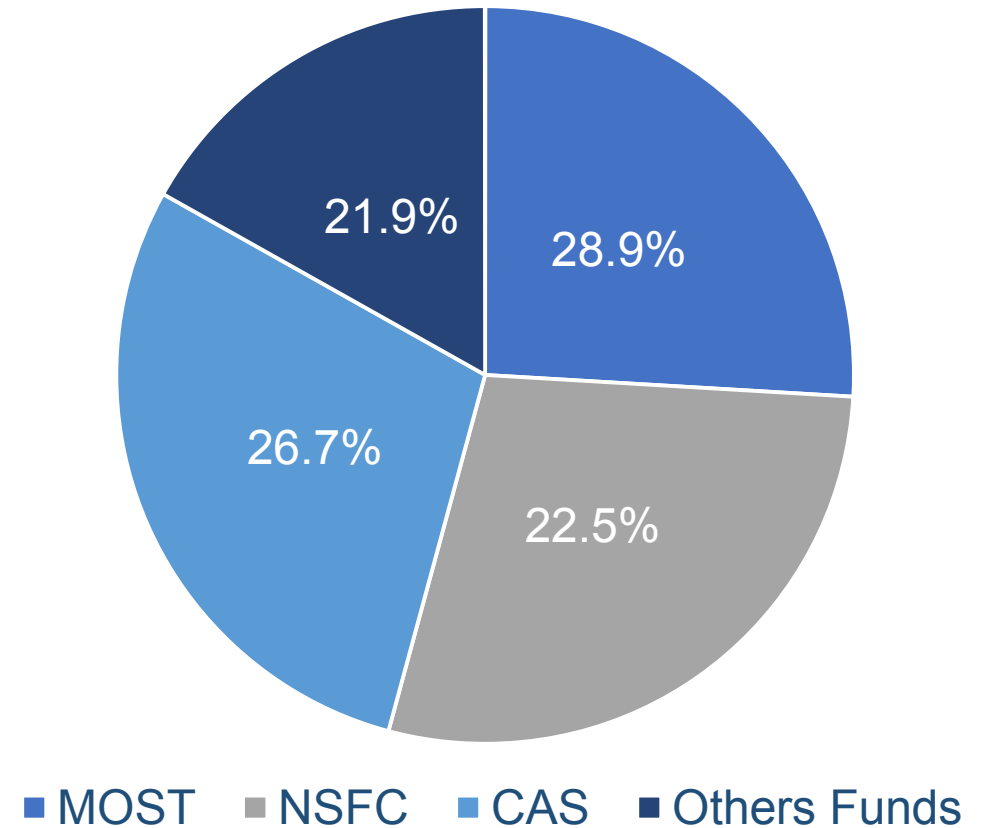
- ✓ **2 State Top Scientific and Technological Awards**
- ✓ **13 National Natural Science Awards**
- ✓ **12 National Science and Technology Progress Awards**
- ✓ **2 International Meteorological Organization (IMO) Prize (2003 & 2017)**
- ✓ **1 The Nicholas P. Fofonoff Award (2022)**
- ✓ **1 AGU Ascent Award (2024)**
- ✓ **1 UNESCO-AI Fonzan International Prize (2025)**





Research Funding

Three major funding
sources including
MOST, NSFC and CAS



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IAP International Cooperative Research Network



英国气象局, Met Office

英国雷丁大学, University of Reading(UoR)

德国马克斯·普朗克研究所, Max Planck

美国国家大气研究中心, NCAR

美国科罗拉多州立大学, Colorado State University(CSU)

美国俄克拉荷马大学美国国家海洋和大气管理局中尺度研究合作研究所,

NOAA Cooperative Institute for Mesoscale Studies, University of Oklahoma(CIWRO)

澳大利亚联邦科学与工业研究组织, CSIRO

俄罗斯科学院大气物理研究所, IAP/RAS

韩国气象厅国立气象科学研究院, KMA/NIMS

日本海洋研究开发机构, JAMSTEC

日本国立环境研究所, NIES

挪威卑尔根大学, University of Bergen(UiB)

芬兰赫尔辛基大学, University of Helsinki(UH)

芬兰气象研究所, Finnish Meteorological Institute(FMI)

意大利国际理论物理中心, ICTP

比利时皇家气象研究所, Royal Meteorological Institute of Belgium(RMI)

泰国水文信息研究所, Hydro-Informatics Institute, Thailand(HII)

法国国家科学研究中心, French National Centre for Scientific Research(CNRS)

印度尼西亚国家研究与创新局, National Research and Innovation Agency of Indonesia(BRIN)

英国兰卡斯特大学, Lancaster University(LU)

英国帝国理工学院, Imperial College London(IC)

巴西圣保罗大学, University of São Paulo(USP)

斯里兰卡佩拉德尼亚大学, University of Peradenia

泰国国家天文研究所, National Astronomical Research Institute of Thailand(NARIT)

蒙古国气象水文环境信息研究所,

Information and Research Institute of Meteorology, Hydrology and Environment, Mongolia(IRIMHE)

泰国清迈大学, Chiang Mai University(CMU)

香港科技大学, Hong Kong University of Science and Technology(HKUST)

香港理工大学, The Hong Kong Polytechnic University(PolyU/HKPU)

Chinese-Russian Cooperation on Atmospheric Physics

History

1991



Signing of the Bilateral Intention Letter on Scientific and Technological Cooperation

- ✓ Starting the cooperation history of **over 30 years**
- ✓ Study on **the air quality of Beijing and Moscow**

2007



Establishment of the Joint Laboratory- CRLAP

- ✓ The opening ceremony held in 2007 in both Beijing and Moscow
- ✓ Research topics expand to atmospheric remote sensing technology, environment and human health, etc.

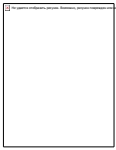
2006-
2026



Regular Academic Exchanges: **17 Joint Academic Conferences**

- ✓ The first conference was held in Moscow in 2006
- ✓ Built a sustainable exchange platform

Outcomes of CRLAP from 1991-2025



Academic Visits

200+ person-times

China → Russia

150+ person-times

Russia → China



Joint Conferences

By the end of 2025,

17 conferences
held in Russia and
China



Joint Papers

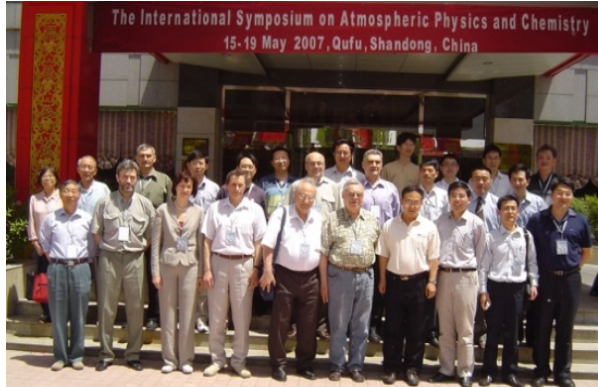
200+

Published in
Chinese, English, Russia
n

Photos from the joint Conferences



1st Conference
June 2006, Moscow, Russia



2nd Conference
May 2007, Qufu, China



3rd conference
Oct 2008, Moscow, Russia



4th conference
Sep 2009, Xingcheng, China



5th conference
June 2010, St. Petersburg, Russia



6th Conference
Nov 2011, Xian, China



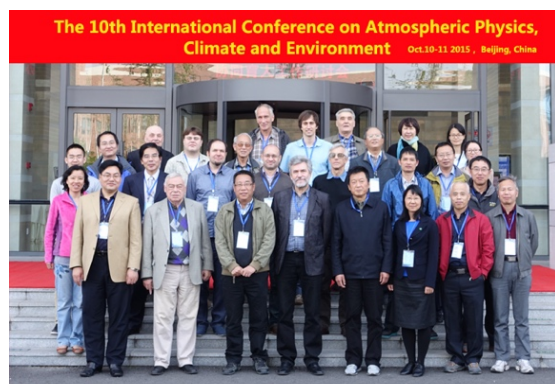
7th Conference
July 2012, Moscow, Russia



8th Conference
Nov 2013, Sanya, China



9th Conference
June 2014, Arkhangelsk, Russia



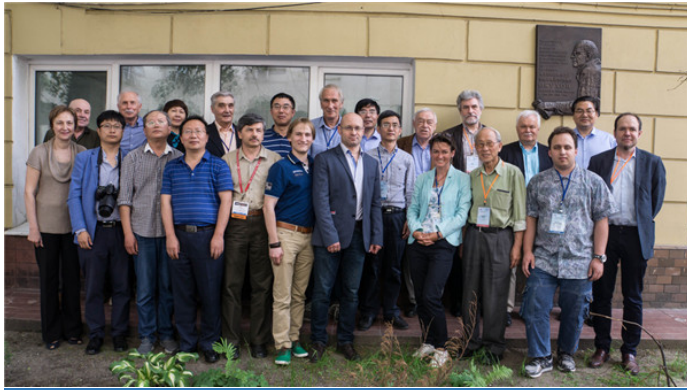
10th Conference
Oct 2015, Beijing, China



11th Conference
Nov 2016, Moscow, Russia



12th Conference
Nov 2017, Nanjing, China



13th Conference
May 2018, Moscow, Russia



14th Conference
Nov 2019, Hunan, China



15th Conference
Sep 2023, Moscow, Russia



16th Conference
Sep 2024, Dunhuang, China



17th Conference
Sep 2025, Sochi, Russia

Photos from the Academic Visiting



IAP/RAS researcher visit IAP/CAS for the first time (1992)



Researchers from IAP and IAO of RAS visited the Xinglong Atmospheric Background Station of IAP/CAS (2005)



Dr. I. Grunberg from IAP/RAS visited IAP/CAS (2005)



Academician Ye Duzheng and Georgy Sergeyevich Golitsyn discussed scientific and technological cooperation between the two institutes (2006)



IAP/CAS delegation visited IAP/RAS (2006)



Academician Georgy Segeyevich Golitsyn from IAP/RAS visited the Xianghe Station of IAP/CAS (2006)



Academician Georgy Segeyevich Golitsyn, I. Mokhov, Wang Huijun, Mu Mu and Professor Zhang Meigen met at 7th Joint Conference (2012)



Academician Georgy Segeyevich Golitsyn, I. Mokhov, and other researchers of IAP/RAS visited IAP/CAS (2015)



Academician Georgy Segeyevich Golitsyn from IAP/RAS met researchers from IAP/CAS (2016)



The delegation from IAP/RAS visited IAP/CAS (2019)



The delegation from IAP/CAS visited IAP/RAS (2023)



The delegation from IAP/RAS visited Dunhuang Station of IAP/CAS (2024)

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IAP National Platforms

New National Key Laboratories

Atmospheric Environment and Extreme Meteorology



Physical and chemical processes in the entire (neutral) atmosphere and their coupling mechanisms

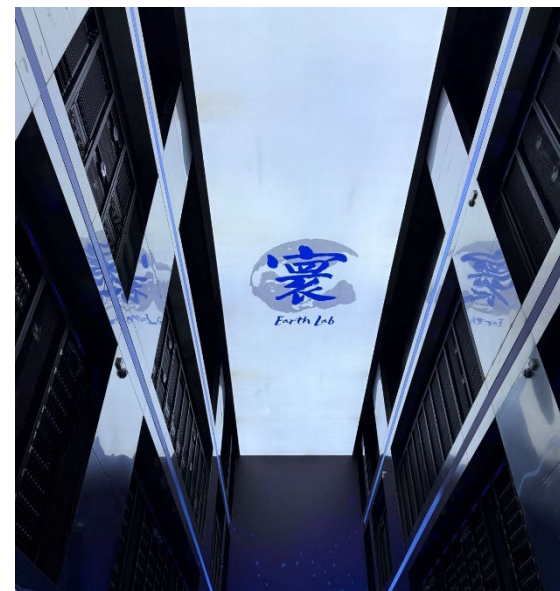
Earth System Numerical Modeling and Application



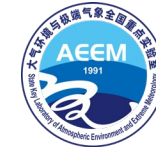
Research and development of a new generation of earth system models and prediction systems

National Major Scientific and Technological Infrastructure

The Earth System Science Numerical Simulator Facility (EarthLab)



Build a numerical modeling facility for the Earth system centered on numerical simulation systems for major Earth spheres and processes



Atmospheric Environment and Extreme Meteorology (AEEM)

Scientific Questions

The coupling mechanism of atmospheric physics and atmospheric chemistry and its influence on extreme meteorological environments

4. Principles of artificial intervention and efficient tracing of environmental atmosphere

3. Theory and model development of short-term and imminent accurate prediction of high-impact weather

2. Coupling mechanisms of atmospheric physics and atmospheric chemistry, and substance-energy exchange

1. Atmospheric stereoscopic detection technology system and physical-chemical processes

Outputs

- ❑ Multi-element detection technology system for the whole atmosphere
- ❑ Adaptive grid chemistry-weather prediction system
- ❑ Manual intervention principle and efficient traceability method

Achieve integrated full-chain innovation encompassing equipment research and development, stereo detection, model development, prediction and early warning, as well as artificial intervention



Earth System Numerical Modeling and Application (LabESM)



1. Mechanism of Earth System Dynamics

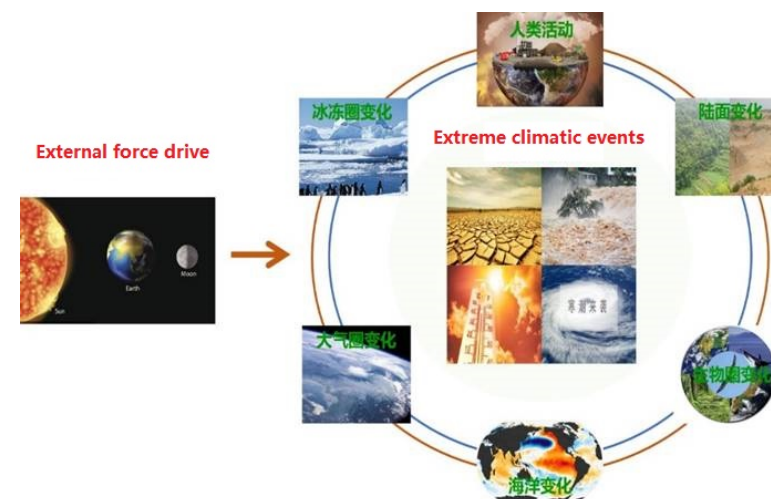
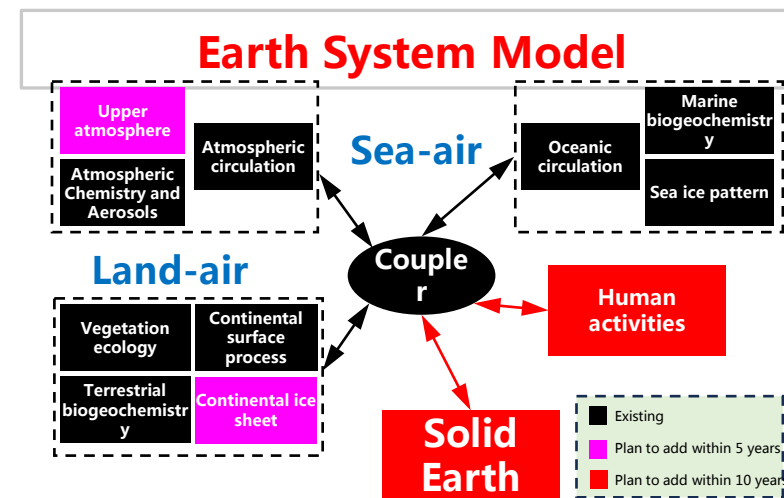
- ⑩ Solid geodynamics
- ⑩ Multi-circle coupling dynamics
- ⑩ Climate change and mechanisms

2. Development of Earth System Model

- ⑩ Solid earth model
- ⑩ Climate system model
- ⑩ Earth system coupling model

3. Climate Prediction and Application

- ⑩ Artificial intelligence approach
- ⑩ Climate prediction and applications
- ⑩ Global change impact and response





EarthLab — a digital earth

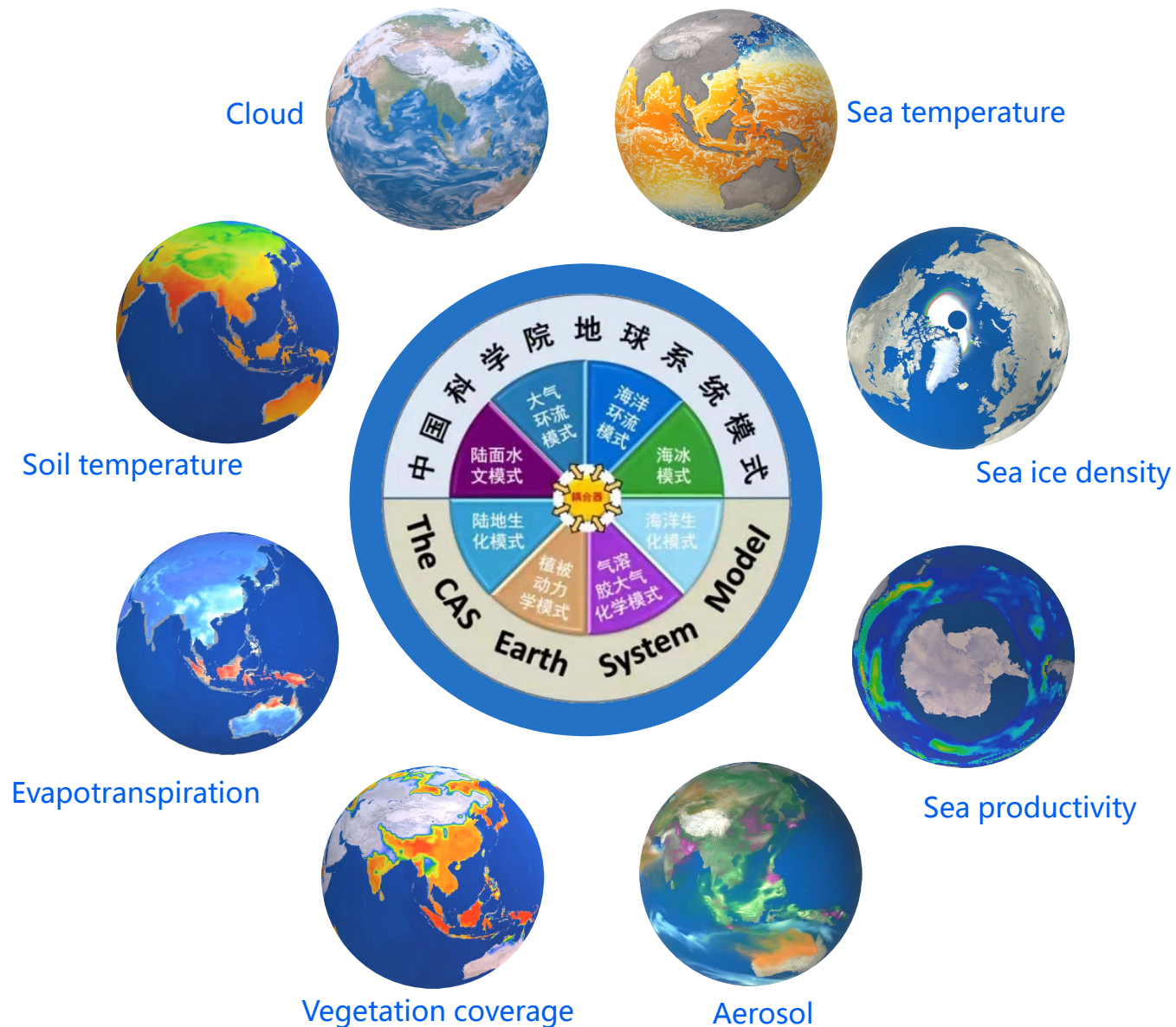


Scientific Objectives

Study key processes and interactions among Earth's spheres, and their impacts on the global system and China's regional environment

Integrate models and observations to improve forecasts, quantify mesoscale Earth system processes, and support disaster mitigation, climate adaptation and air quality management

Boost interdisciplinary Earth system science and elevate China's research to global excellence





**Invitation to the event of the
100th Anniversary of Institute of
Atmospheric Physics, Chinese
Academy of Sciences in 2028**

Thank You



China-Russia Cooperation in Atmospheric Sciences