



国际气候与环境科学中心
International Center for Climate and Environment Sciences

Activity Report of ICCES

February 2023 to September 2024



LIN Zhaohui

**International Center for Climate and Environment Sciences, IAP/CAS
& CAS-TWAS center of excellence for Climate and Environment Sciences**

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Activities relates to South-South Cooperation
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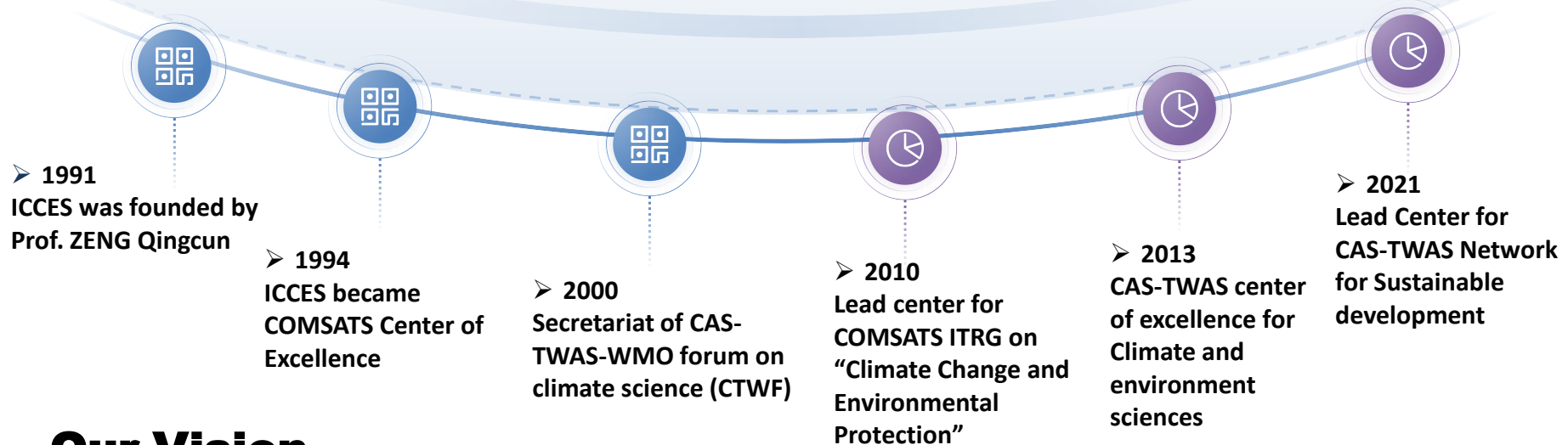
03

Future Plan for COMSATS Network



Overview of ICCES

Our History



Our Vision

To establish the cooperative and innovation research center in the area of climate and environment sciences, and to provide services to the developing countries with scientific support, and capacity building.

Overview of ICCES

ICCES focuses its research on key scientific problems related with global climate and environmental changes.

Research Fields

01

**Earth System Model
Development and
Numerical Simulation**

02

**Meteorological and
Environmental
Forecast and
Disaster Assessment**

03

**Data Assimilation
Theory
And Technique**

04

**Earth System Theory
and Natural Cybernetics**

Overview of ICCES

ICCES takes initiatives for combating climate change impacts and solving problems for developing countries

CAS-TWAS-WMO Forum

CTWF strengthened the relationships among CAS, TWAS, and WMO and facilitated North-South collaboration.

Education, Training & Capacity Building

Provided educational and training opportunities for young scientists from developing countries, providing them with the tools and knowledge for their research and development in future career.



Strategic Consultancy, Sharing of Data & Information

Provided science-based consultations, data and information for developing countries to tackle the adverse impacts of climate change and to achieve sustainable development for all.

Internationally, Interdisciplinary Networking & Research

Promoted collaborative programs for the development and promotion of science and technology in the South.

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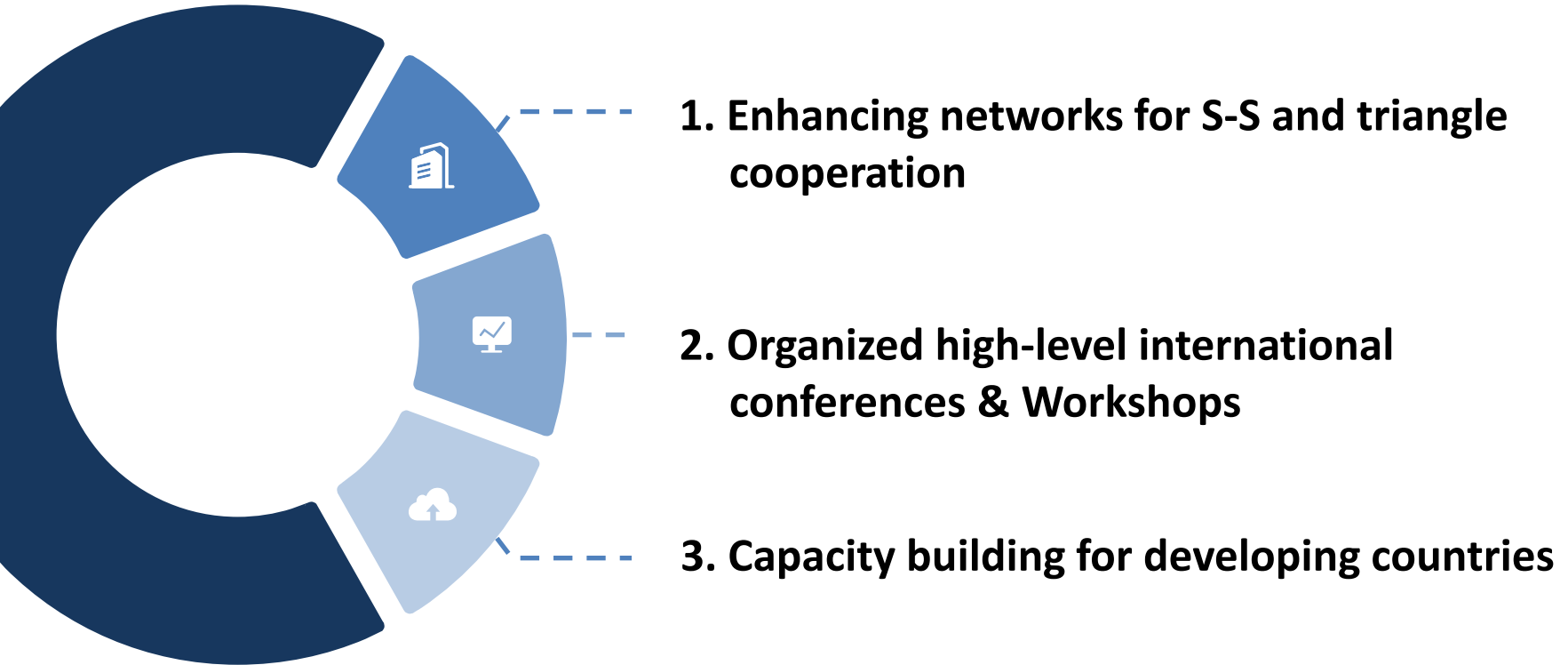
**Activities relates to South-South Cooperation
and SDGs**

03

Future Plan for COMSATS Network



Activities relates to S-S Cooperation and SDGs



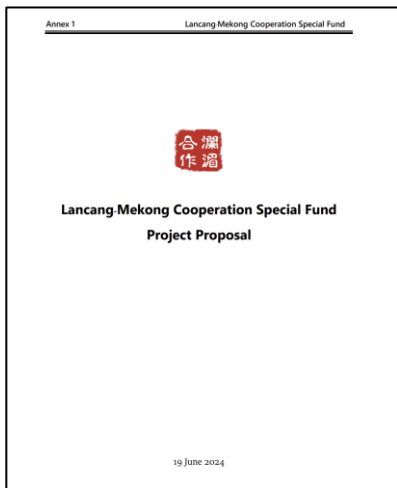
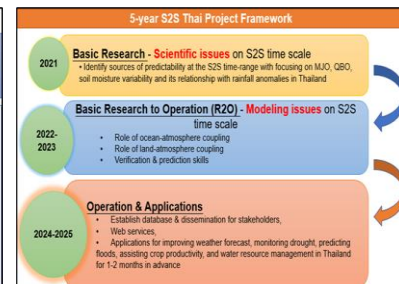
1. Enhancing networks for S-S and triangle cooperation

① Hydrological Information Institute (HII), Thailand

ICCES and HII received funding for joint project:

- **Project:** Sub-Seasonal to Seasonal (S2S) Prediction Project for Disaster Risk Reduction and Water Management in Thailand
- **Budget:** about 1,221,000 USD, Thailand Science Research and Innovation (TSRI)
- **Duration:** 2021-2025

Research and Development for Weather-to-Climate Prediction	
Sub-Seasonal to Seasonal (S2S) Prediction Project for Disaster Risk Reduction and Water Management in Thailand (S2S-THAI Project); 5-year Plan (2021-2025)	
• Lead Project: Kritanai Torsi, Hydro-Informatics Institute (HII)	
• Project Period: Started: 2021 Ended: 2025 (5-year Plan; Re-considering project proposal every fiscal year)	
• Funder: Thailand Science Research and Innovation (TSRI) Fund, Ministry of Higher Education, Science, Research and Innovation (MHESRI)	
• Budget: Approx. 37,500,000 Thai Baht (· 8,200,000 RMB) for 5-year project	



In 2024, ICCES and HII cooperate with LAO, submit the application of **“Enhancing Water Resource Management for Climate-Smart Agriculture in Lancang-Mekong River Sub-basin”**



2023 and 2024 Delegation of ICCES visited HII on and its Automated Telemetry Station and High-performance Computing Center.

② Srinakharinwirot University, Thailand

- The cooperation between SWU and ICCES since 2016, when two parties signed a memorandum of cooperation. **In 2023, two parties conducted mutual visits.**
- Two sides discussed cooperative research **in the areas of urbanization and its environmental impact, land use, geographic information technology.**



September, 2023, ICCES delegation visited SWU, Thailand



November, 2023, a delegation from the Faculty of Social Sciences at SWU visited ICCES, China

③ Chiang Mai University, Thailand

- October 2023, Dr. Chakrit Chotamonsak and Ms. Duangnapha Lapyai from Chiang Mai University visited ICCES and have a meeting with researchers of ICCES.
- The delegation visited The Earth System Science Numerical Simulator Facility of Miyun campus of Institute of Atmospheric Physics.



④ Vietnam National University Nong Lam University Can Tho University, Vietnam

- November 30 to December 2, 2023, the ICCES delegation visited three institutions in Vietnam to discuss climate change and agriculture, climate forecasting, and international cooperation matters.



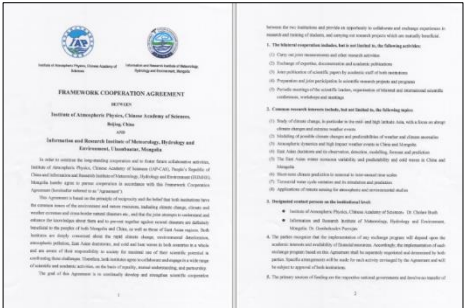
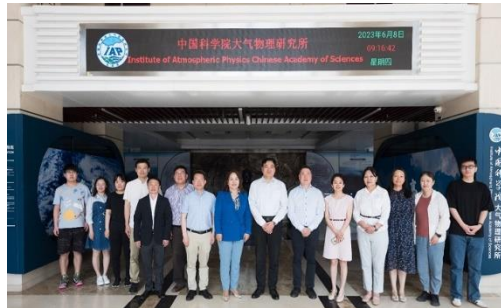
⑤ The Islamia University of Bahawalpur (IUB), Pakistan

- December 7, 2023, IUB organised the 3rd International Conference on "Agricultural Innovation to Ensure Food Security in Climate Change," with the theme "The Threat of Climate Change to Agriculture," co-hosted by ICCES.
- Prof. LIN Zhaohui gave an online keynote speech titled "Changes in Drought under Global Warming and Its Future Predictions."



⑥ Research Institute of Meteorology, Hydrology and Environment, Ulaanbaatar, Mongolia (IRIMHE)

- Framework Cooperation Agreement between the IAP and the IRIMHE was signed in June, 2023.
- Two parties conducted mutual visiting.
- In 2023, two parties held a workshop entitled "Cross-border sandstorm activities between China and Mongolia in recent years".



Collaboration with COMSATS CoEs and Secretariat

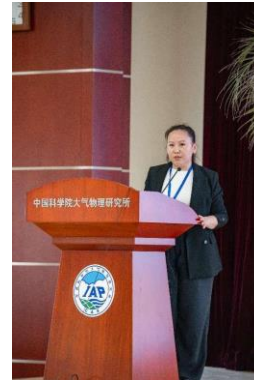
⑦ Industrial Technology Institute, Sri Lanka

- Prof. LIN Zhaohui was invited to **attend the 6th Biennial Symposium** held by the Industrial Technology Institute of Sri Lanka from November 7th to 9th, 2023, in Colombo.
- Prof LIN delivered a keynote speech titled **"Drought variation and changes under a warming climate and its future projection."**



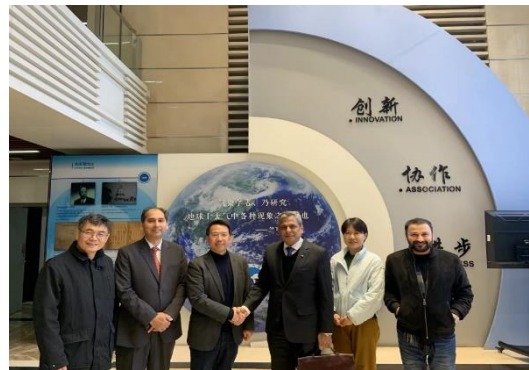
⑧ Al-Farabi Kazakh National University, Kazakhstan

- Dana Shokparova is a Senior Lecturer at Al-Farabi Kazakh National University.
- In September 2024, **ICCES supported her** to come to Beijing to participate in the CAS-TWAS-Elsevier Climate Action Training Workshop.
- At the training workshop, she gave a presentation titled **"Landscape Response to Climate Change in Kazakhstan."**



ICCES actively participates in events organized by the COMSATS Secretariat and maintains close contact with the Secretariat.

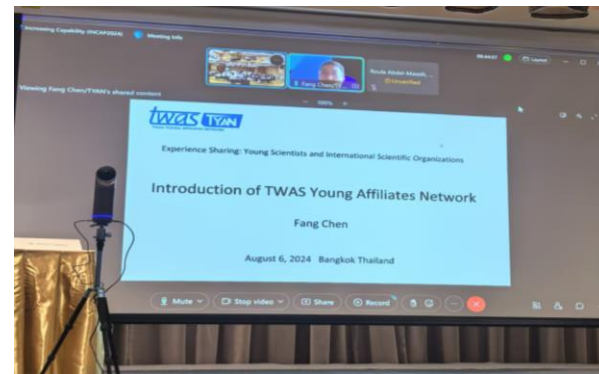
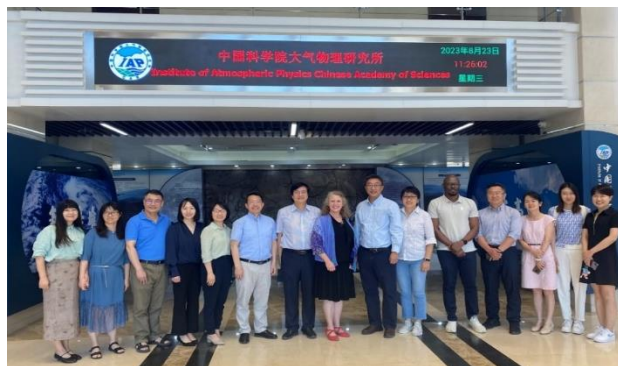
- **November 2023**, Ambassador **Dr. Mohammad Nafees Zakaria**, Executive Director of COMSATS, Irfan Hayee, Additional Director, and Qaisar Nawab, Staff Officer to Executive Director, visited ICCES.
- **December 2024**, Deputy Director of ICCES, participated in the **side event organized by COMSATS at the 28th United Nations Climate Change Conference (COP28)**.
- **January 2024**, Director of ICCES attended the **29th Anniversary Celebration of the Establishment of COMSATS and delivered a speech as the Guest of Honour**.
- **May 2024**, Prof. LIN Zhaohui participated Scientific Experts' panel discussion as part of **UN STI Forum "Catalyzing Change: Science, Technology, and Innovation in the Global South"**.



⑩ THE WORLD ACADEMY OF SCIENCES (TWAS)

ICCES maintains close contact with the TWAS Secretariat, TWAS Regional Office, TWAS Young Affiliate Network and TWAS Strategic Partners.

- August 2023, **Ms. Ylann Schemm, Executive Director and Vice President of Corporate Responsibility of the Elsevier Foundation**, visited ICCES. **The Elsevier Foundation is a strategic partner of TWAS.**
- November, 2023, **Dr. Massimo Paoli, the Senior Officer of TWAS** visited ICCES. Discuss the conceptual plan of the "CAS-TWAS-Elsevier foundation 2024 Climate Change Action Thematic Training Course" to be hosted by ICCES in 2024.
- May, 2024, **Dr. Franco, the co-chair of TWAS Young Affiliate Network(TYAN)**, visited ICCES and discussed future collaboration with ICCES.
- August, 2024, **ICCES and TWAS regional office co-organised a special session** titled“ experience sharing: Young Scientists and International Scientific Organisations” in Bangkok, Thailand. representatives from TWAS regional office, TYAN and 40 young scientists attended.



2. Organized International Conferences & Workshops



The 19th CTWF International Symposium on Earth System Model Development & Application

- November 2023, 19th CTWF was held in hybrid form.
- **More than 120 people from 30 countries participated in the conference.** The participants were from Australia, Bangladesh, Benin, Burundi, China, Germany, Ethiopia, Ghana, India, Iran, Cote d'Ivoire, Kenya etc.



3rd International Conference on Geography & Geoinformatics for Sustainable Development (ICGGS)

- **3rd ICGGS was held from 30 November to 2 December 2023 in Can Tho, Vietnam.**
- The conference was co-organized by Srinakharinwirot University, Thailand and Can Tho University, Vietnam.
- **About 100 people from Thailand, Vietnam and other representatives from other Southeast Asian countries attended the conference.**



- **Total of 28 trainees participated**, they are researchers and scholars from Mongolia, Vietnam, India, Pakistan, Malaysia, Indonesia, Iran, Morocco, Nepal, Sri Lanka, Egypt, Malawi, Nigeria, Kenya and other developing countries, as well as representatives from Germany, the United States, two tutors from CODATA also joined the workshop.

INCAP 2023 International Training workshop

- **September, 2023 in Bangkok, 90 participants**
- **“Increasing Capability on Drought and its prediction at S2S time scale”**



INCAP 2024 International Training workshop

- **August, 2023 in Bangkok, 120 participants**
- **“Increasing Capability for Weather and Climate in Thailand through Numerical Methods, Machine Learning, and Artificial Intelligence”**



CAS-TWAS-Elesvier Foundation Climate Action international Training Workshop



Lecturer: Prof. ZHAI Panmao
Co-Chair for IPCC AR6 WG1, Vice president of the
National Climate Change Expert Committee in China

- September 2-6, 2024, ICES hosted the CAS-TWAS-Elsevier Climate Action Training Workshop.
- This marked the first time a training program themed around **climate change and gender equality**, emphasizing **women's leadership and empowering the role of women scientists in climate action**.



Trainer: Dr. Scott Jones, Mind
the Gap Research and
Training, Scotland ➡

Trainer: Tracey Brown
OBE, Director of Sense
about Science, UK ◀



CAS-TWAS-Elesvier Foundation Climate Action international Training Workshop

There are 36 representatives from 25 countries

- **There are 17 from Africa**, who come from 13 countries including Benin, Congo, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Sudan, Tanzania, Tunisia, Uganda, and Zimbabwe.
- **There are 18 from Asia**, who come from 11 countries including Bangladesh, Iran, Kazakhstan, the Lao People's Democratic Republic, Lebanon, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand, and Vietnam.
- **One person is from South America, Bolivia.**



Dr. Max Paoli, Senior Program Officer, The World Academy of Sciences and Ms. Ylann Schemm, Executive Director, Elsevier foundation attended the workshop



3. Education for Young talents in developing countries



THE WORLD ACADEMY OF SCIENCES
for the advancement of science in developing countries

ICTP Campus
Strada Costiera 11 • 34151 Trieste, Italy
Phone +39 040 2240 327 • Fax +39 040 224 559
www.twas.org • info@twas.org

TWAS-UNESCO Associateship Scheme
at Centres of Excellence in the South

TO:
Dr. Ammara Habib
The Urban Unit, Planning and Development Board
Government of the Punjab
607-6th Floor Shaheen Complex Egerton Road
Lahore
Pakistan

17 June 2024

SUBJECT: TWAS-UNESCO Associateship - Ref. 3240336536

Dear Dr. Habib,

Under the TWAS-UNESCO Associateship Scheme, TWAS-UNESCO selects experienced researchers ("Associates") from developing countries and provides them with financial support, through a grant, to enable them to visit, during a period of three years, a centre of excellence in the South for research collaboration in the field of natural sciences. The lists of participating centres in the South which have agreed to collaborate with TWAS-UNESCO under the Associateship Scheme can be found on the UNESCO-TWAS website.

Under this Scheme, TWAS-UNESCO provides a grant that covers the Associate's travel expenses and a monthly contribution of USD 300.00 during each visit towards incidental local expenses. The host institute receiving the appointed researchers covers accommodation and food, and provides the research facilities under the conditions agreed with UNESCO-TWAS.

In this context, we have the pleasure to inform you that you have been selected to receive a TWAS-UNESCO Associateship grant to make two research collaboration visits at the following centre of excellence:

International Centre for Climate and Environment Studies (ICES/IAP)
Chinese Academy of Sciences
Beijing 100029
China

in accordance with the terms and conditions set forth below:

1. The dates of the two visits need to be agreed upon by the Associate and Prof. Zhaohui Lin who is the person responsible at the host institute. The first visit needs to take place within one year from the award letter date.

Pakistan femal scientist was awarded TWAS-UNESCO Research Fellowship 2024 to conduct collaborative research at ICCES

- **Dr. Ammara Habib, a women scientist, who currently is a Program Manager (Environment and Social Safeguard), The Urban Unit Planning & Development Board, in Government of the Punjab.**
- **Research topic: "Projecting the Future changes in Extreme Climate Events over South Asia towards Carbon-Neutrality using CMIP6 Simulations."**
- **Collaborator: Prof. LIN Zhaohui from ICCES**

3. Education for developing countries

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Discipline group	Sub-discipline group
城建与环境科学	环境保护

Funding No.
IS24059

Assignment Form of Beijing Natural Science Foundation (International Scientists Project)

Project name: 基于 CAS-ESM2.0 和深度学习改进西非夏季极端降水的次季节-季节预测

Principal Investigator: Victor Nnamdi Dike

Nationality: Nigeria

Host institution: 中国科学院大气物理研究所

Funding amounts: 20

Starting and Ending Time: 2024.7-2026.6


Date of filling: 2024-06

Designed by the Office of Beijing Natural Science Foundation Committee
2024

ICCES Graduate won 2024 Beijing Natural Science Foundation Program

- Dr. Victor Dike, awardee of PIFI scholarship for PhD student and PIFI postdoc scholarship, now visiting associate professor in ICCES, has been awarded the "Hui Zhi" project support for foreign scholars by the Beijing Natural Science Foundation.
- The research topic of the project that received funding is " **Improving Sub-seasonal-to-Seasonal Prediction of Summer Rainfall Extremes over West Africa using CAS-ESM and deep learning** ", with budget of 200,000 CNY.
- Collaborator: Prof. LIN Zhaohui from ICCES

3. Education for developing countries

	Application Code	D0502
	Reference Number	
	Grant Number	

National Natural Science Fund of China
Research Fund for International Scientists

Type: Research Fund for International Young Scientists

Applicant name: Alireza Kamel

BRID: 07150.00.88052

Nationality: 伊朗 E-mail: alireza@mail.iap.ac.cn

Project title: Linkage of dust activity changes in the Middle East and East Asia over the past 40 years and possible mechanisms

Grant period: 01/01/2025-12/31/2026

Host institution: 中国科学院大气物理研究所

Contact person: 李慧群 Tel.: 010-82995409

E-mail: lihuiqun@mail.iap.ac.cn

Address: 北京朝阳北辰西路81号院

Postal Code: 100029

National Natural Science Foundation of China

ICCES Graduate won the 2024 National Natural Science Fund of China

- Dr. Alireza Kamal, awardee of PIFI scholarship for PhD student, and postdoctoral researcher at ICCES.
- Research Fund for International Young Scientists, National Natural Science Foundation of China, entitled "**Linkage of Dust Activity Changes in the Middle East and East Asia over the Past 40 Years and Possible Mechanisms**". Budget: 550,000 CNY.
- Collaborator: Prof. LIN Zhaohui and Zhang He, Wu Chenglai from ICCES

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SDGs are closely linked with Earth system modeling and prediction



**The achievement of UN sustainable development Goals (SDGs) are closely linked with disaster early warning and climate action.
Earth system model is an important Tool.**

Big Science Facility of China to support climate change study

The Earth System Science Numerical Simulator Facility, named “EarthLab”, is a numerical simulation system of the main Earth systems with matching software and hardware (CAS Earth System Model and supercomputing resources) (1.26 billion RMB, to be finished in Sep. 2022)

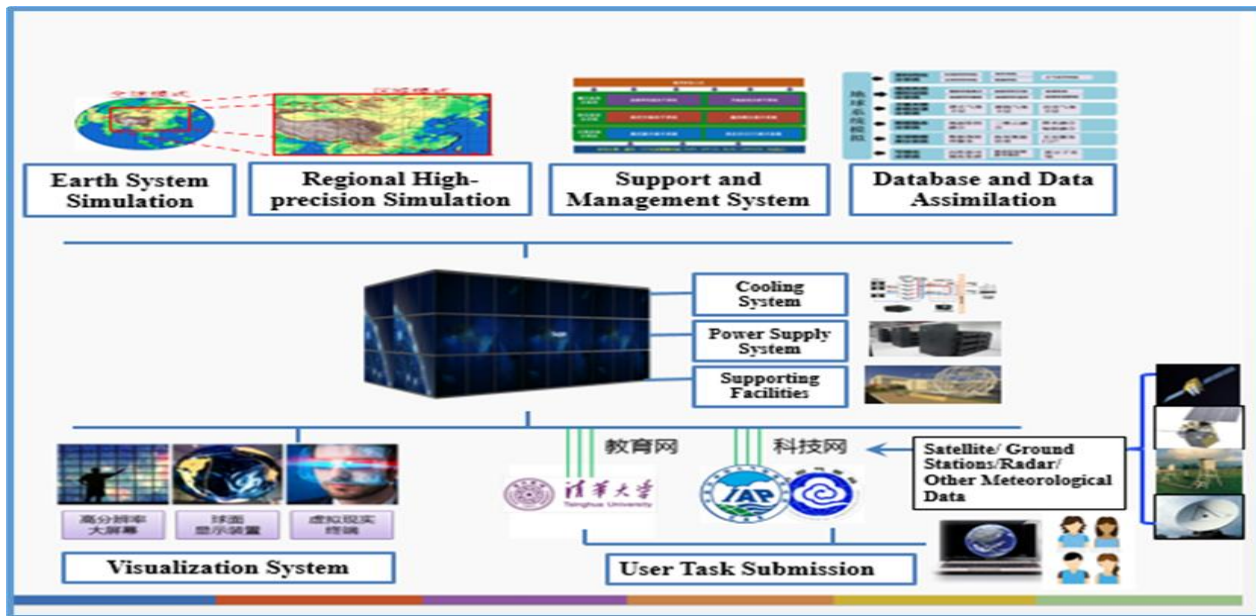


The facility will be capable of producing a numerical simulation of Earth, and features a parallel framework and visualization system. It can be used to predict evolutionary earth system changes, including ocean currents, the atmosphere, land surface processes, ecology, etc.

It provides a numerical simulation platform to take Earth system research in China to developing countries; and support developing countries' disaster prevention and mitigation, climate change, and atmospheric environment governance, along with other major issues.

Applying CAS Earth-Lab for joint research amongst COMSATS network for sustainable development

Configuration of CAS Earth System numerical simulator facility



- Peak: 15PFLOPS; Storage Capacity: 80PB; Resolution: 10-25km, 50 Levels; High regional resolution:1-3km

Enhancing the joint research activities under COMSATS ITRG on climate change and environmental protection, with support from Big Science Facility (Earth Lab)

PIFI Program



中国科学院
CHINESE ACADEMY OF SCIENCES



President's International
Fellowship Initiative
国际交流计划

<https://pifi.cas.cn/front/pc.html#/bicsite/home>

The Chinese Academy of Sciences (CAS) President's International Fellowship Initiative, PIFI, is a funding program designed to establish scientific cooperation and promote research communication around the globe. It is open to all scientific research personnel worldwide. Aiming at promoting global research mobility, the PIFI covers scholars at different career stages, from Nobel laureates to young master's students.



PD

PIFI DISTINGUISHED SCIENTIST

WHAT WILL YOU DO?

Conduct academic exchange activities in at least two CAS-affiliated institutions (research institutes or universities) in 1-2 weeks.

WHAT DO WE OFFER?

A package covering living expenses, transportation costs, insurance and an allowance.

WHO CAN APPLY?

Well-established and internationally recognized scientists



PA

PIFI AMBASSADOR

WHAT WILL YOU DO?

Coordinate and participate in related activities at the academy level.

- Visit CAS for 2 weeks
- Visit at least three CAS-affiliated institutions (research institutes or universities)

WHAT DO WE OFFER?

A package covering living expenses, meals, transportation costs, insurance and lecture fee (consulting fee)

WHO CAN BE RECOMMENDED?

PIFI fellows who have achieved significant results



PY

PIFI YOUNG LEADER

WHAT WILL YOU DO?

Participate in training and exchanges at CAS for no less than one week.

- Visit at least two CAS-affiliated institutions (research institutes or universities)
- No less than 20 visits will be funded for each project.

WHAT DO WE OFFER?

A package covering living expenses, meals, transportation costs and insurance.

WHO CAN APPLY?

Excellent doctoral and master's students as well as postdoctoral fellows from top universities and research institutions around the globe.



PV

PIFI VISITING SCIENTIST

WHAT WILL YOU DO?

Conduct academic visits or cooperative research at CAS for 1-6 months.

WHAT DO WE OFFER?

A package covering transportation costs, insurance and an allowance.

*The funding amount depends on your length of stay and your qualifications.

WHO CAN APPLY?

Excellent foreign scholars who work in foreign institutions (including postdoctoral fellows)



PG

PIFI GROUP

WHAT WILL YOU DO?

Conduct visits, exchanges and cooperative research with one CAS leading team for 3 years.

WHAT DO WE OFFER?

Funding criteria refers to one of three categories: PIFI Distinguished Scientist, PIFI Visiting Scientist and PIFI Young Leader.

*The CAS team leader shall negotiate with the foreign team leader to choose an appropriate project execution method.

WHO CAN APPLY?

International scientists with outstanding academic achievements and significant international influence can apply as a foreign team leader.
Team members should be recommended by the foreign team leader.

ANSO Programs



The **Alliance of International Science Organizations (ANSO)** is a non-profit, non-governmental international organization founded in 2018. Founding members include 37 scientific institutions, universities, and international organizations worldwide. ANSO aims to improve regional and global capacity in science and technology, human livelihoods and wellbeing, and to promote broader S&T cooperation and communication.

Scholarship for PhD program and Master's program Coverage

Item	PhD program	Master's program
1	Tuition waiver	Tuition waiver
2	Monthly stipend: 6,000 or 7,000 CNY/month (depending on whether the awardee has passed the qualification test arranged by the University), up to 48 months	Monthly stipend: 3,000 CNY/month, up to 36 months
3	Health insurance	Health insurance
4	Application fee waiver	Application fee waiver
5	International travel allowance from awardee's home country to China (one trip per awarded candidate)	International travel allowance from awardee's home country to China (one trip per awarded candidate)
6	One-time visa/residence permit allowance	One-time visa/residence permit allowance

Pay attention to the website: <http://www.anso.org.cn/>
The ANSO Scholarship for Young Talents 2024 Call for Applications



Contact host institute and find a supervisor



Discussion and material evaluation by supervisor and apply on-line



Materials evaluation by host institution and interview by supervisor

NSFC Programs



国家自然科学基金委员会

National Natural Science Foundation of China

Research Fund for International Scientists

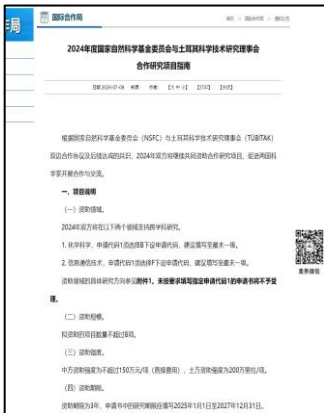
I. Types of Grant

The RFIS consists of three sub-types:

1. The Research Fund for International Young Scientists (RFIS-I)
2. The Research Fund for International Excellent Young Scientists (RFIS-II)
3. The Research Fund for International Senior Scientists (RFIS-III)

- the Research Fund for International Scientists (RFIS) is set up by the National Natural Science Foundation of China (NSFC) to support international scientists with foreign citizenship who are ready to conduct basic research in China's mainland.
- The RFIS is open to all research areas within the NSFC's funding scope, The application process will open at the beginning of each year.
- Website: <https://www.nsf.gov.cn/>

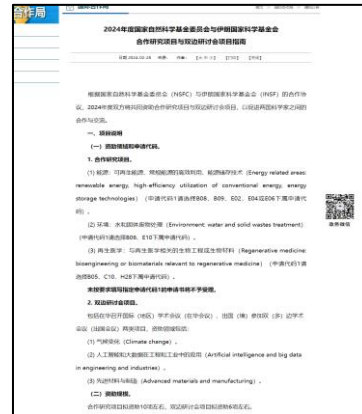
Bilateral or multilateral joint research projects



NSFC and the Scientific and Technological Research Council of Turkey (TÜBİTAK) ←



Egyptian Academy of Scientific Research and Technology (ASRT) →



NSFC and the National Science Foundation of Iran (INSF)



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International Center for Climate and Environment Sciences

Thanks for Your Attention!

