



2018 LASG Summer School on Climate System Model Development and Application

<http://www.lasg.ac.cn/2018summerschool/>

July 12-16, 2018 Beijing, China

Second Circular

Weather and climate prediction increasingly depends on the climate model projections, which could be improved by developing the dynamic framework and physical parameterizations. With years' development, substantial progress has been made in models' resolution and parameterizations of different physical processes. Climate models have been powerful tools for both studying climate changes and providing solutions to the scientific and social problems caused by climate changes. Development and application of climate system models constitute an essential part of the earth science research and one of the important directions in the international future earth research. The State Key Laboratory of Numerical Modelling for Atmospheric Sciences and Geophysical Fluid Dynamics (LASG), Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences (CAS), plans to hold a summer school themed "Climate System Model Development and Application" during July 12-16, 2018 in Beijing, China.

Themes

- Introduction to climate system model
- Physical process scheme of climate system model
- Application of climate system model in climate variability and climate change research

Lectures by invited speakers will form the core of the agenda. A number of short oral and poster presentations by attendees will complement the agenda. Plenty of time will be allowed for discussion and exchange.

Date & Venue

July 12-16, 2018, Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences (CAS), Beijing, China

Registration

Reception of registered participants' check-in starts from 9:00 until 17:00 at Keyanlou meeting room 101 on July 11.

Grant

We have limited funding to sponsor domestic travel (semi-cushioned berth or CRH second class train ticket) and hotel for students outside Beijing. We will not support international travel. The selected grantees have been informed by LOC through email. Grantees must attend all the courses and submit a summary within a week after the event.

Invited Lecturers (Alphabetical)

Gianpaolo Balsamo, European Centre for Medium-range Weather Forecast

Qing Bao, IAP, CAS, China

June-Yi Lee, Pusan National University, Korea

Laurent Li, National Center for Scientific Research, France

Lijuan Li, IAP, CAS, China

Hailong Liu, IAP, CAS, China

Yimin Liu, IAP, CAS, China

Masaki Satoh, University of Tokyo, Japan

Bin Wang, IAP, CAS, China

Masahiro Watanabe, University of Tokyo, Japan

Guoxiong Wu, IAP, CAS, China

Guangjun Zhang, Scripps Institution of Oceanography & Tsinghua University

Minghua Zhang, State University of New York at Stony Brook & IAP CAS

Tianjun Zhou, IAP, CAS, China

Tentative Agenda

Day 1 (Thursday, July 12)

AM

Chair: Anmin DUAN

08:00-8:10 Opening Remarks (Ziniu XIAO)

Theme1. Introduction to Climate System Model

08:10-08:55 Lecture

08:10-10:10 08:55-09:05 Break Guoxiong WU Understanding the Orography
Impact on the Asian Monsoon
09:05-09:50 Lecture Yimin LIU Based on Numerical Modeling

09:50-10:10 Discussion

10:10-10:30 Tea Break & Group Photo

10:30-11:15 Lecture

10:30-12:30 11:15-11:25 Break Bin WANG On Design of Finite-Difference
Dynamical Core for Atmospheric
11:25-12:10 Lecture Models

12:10-12:30 Discussion

12:30 Lunch

PM

Chair: Tie DAI, Wenmin MAN

Theme 2. Physical Process Scheme of Climate System Model

14:00-14:45 Lecture

14:00-16:00 14:45-14:55 Break Masahiro WATANABE Weather and Climate Change
14:55-15:40 Lecture Attribution Studies Using GCMs

15:40-16:00 Discussion

16:00-16:15 Tea Break

16:15-17:00 Bringing ideas together – Day 1

Day 2 (Friday, July 13)

Theme 2. Physical Process Scheme of Climate System Model

AM

Chair: Xiaocong WANG, Wei CHEN

08:00-10:00	08:00-08:45	Lecture	Minghua ZHANG	Cloud Feedback and Relationship with Parameterizations of Boundary-Layer Turbulence and Shallow Convection in Atmospheric Models
	08:45-08:55	Break		
	08:55-09:40	Lecture		
	09:40-10:00	Discussion		

10:00-10:20 Tea Break

10:20-12:20	10:20-11:05	Lecture	Guanjun ZHANG	The Interaction of Convection and Large-scale Circulation and Its Parameterization in Climate and Numerical Weather Prediction Models
	11:05-11:15	Break		
	11:15-12:00	Lecture		
	12:00-12:20	Discussion		

12:20 Lunch

PM

Chair: Bian HE, Lixia ZHANG

14:00-16:00	14:00-14:45	Lecture*	Gianpaolo BALSAMO	A Roadmap to Earth System Modelling that Include Human Influence: Why & How Numerical Weather Prediction (NWP) Embrace Natural & Anthropogenic CO2 Emissions & Transport
	14:45-14:55	Break		
	14:55-15:40	Lecture*		
	15:40-16:00	Discussion		

16:00-16:15 Tea Break

16:15-17:00 Bringing ideas together – Day 2

Lecture- Dr. Gianpaolo Balsamo will give a lecture remotely.*

Day 3 (Saturday, July 14)

Theme 3. Application of Climate System Model in Climate Variability and Climate Change Research

AM

Chair: Liwei ZOU, Wenting HU

	08:00-08:45	Lecture		
08:00-10:00	08:45-08:55	Break	June-Yi LEE	Subseasonal Climate Predictability and Prediction
	08:55-09:40	Lecture		
	09:40-10:00	Discussion		

10:00-10:20 Tea Break

	10:20-11:05	Lecture 1		Lecture 1: Projection of Global Monsoon Changes: Uncertainty and the Underlying Mechanisms
10:20-12:20	11:05-11:15	Break	Tianjun ZHOU	Lecture 2: Detection and Attribution of Climate Changes
	11:15-12:00	Lecture 2		
	12:00-12:20	Discussion		

12:20 Lunch

PM

Chair: Jiandong LI, Xiaohao QIN

	14:00-14:45	Lecture		
14:00-16:00	14:45-14:55	Break	Laurent LI	Climate Response to Earth Greening during the Last Three Decades
	14:55-15:40	Lecture		
	15:40-16:00	Discussion		

16:00-16:15 Tea Break

16:15-17:00 Bringing ideas together – Day 3

Day 4 (Sunday, July 15)

Theme 3. Application of Climate System Model in Climate Variability and Climate Change Research

AM

Chair: Yiyuan LI, PeiHua QIN

	08:00-08:45	Lecture		
08:00-10:00	08:45-08:55	Break	Masaki SATOH	Introduction to Global Cloud Resolving Models
	08:55-09:40	Lecture		
	09:40-10:00	Discussion		

10:00-10:20 Tea Break

	10:20-11:05	Lecture		
10:20-12:20	11:05-11:15	Break	Hailong LIU	The Development of Climate Ocean Model in LASG/IAP
	11:15-12:00	Lecture		
	12:00-12:20	Discussion		

12:20 Lunch

PM

Chair: Weihua YUAN, Weipeng ZHENG

	14:00-15:00	Lecture	Lijuan LI	Brief introduction to the Grid-point Atmospheric Model of IAP LASG (GAMIL) and its coupled model FGOALS-g
14:00-16:00	15:00-15:10	Break		
	15:10-16:10	Lecture	Qing BAO	Grand Challenge on Climate Prediction

16:10-16:25 Tea Break

16:25-17:00 Bringing ideas together – Day 4

Day 5 (Monday, July 16)

AM

Chair: Anmin DUAN

Attendees Presentation & Discussion

	08:00-08:20	Mudassar IQBAL	Air Temperature Trends during 1965-2014 over the Source Region of the Yellow River and Its Sub-basins
08:00-09:20	08:20-08:40	Tianying LIU	A Study of North Pacific Interdecadal Variability and Its Potential Dynamical Mechanism
	08:40-09:00	Xiangyu GUO	Variations in the Start, End, and Length of Extreme Precipitation Period across China
	09:00-09:20	Jinping WANG	Arctic Sea Level Variability: Observations and Simulation
09:20-09:35	Tea Break		
09:35-10:00	Closing		

Poster

Size: 90cm (width)*120 cm (height)

Accommodation

The LOC suggest participants booking hotels near the venue. Please note that you are personally responsible for all aspects of your booking, including payment. The LOC will provide packed lunch for registered participants during the event.

Hotels near the venue include:

1. Holiday Inn Express Beijing Minzuyuan
2. North Star Yuanchenxin International Hotel
3. Beijing Yuanshan Hotel
4. Foreign Expert Building Beijing
5. Beijing Aden Hotel

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