FUDAN UNIVERSITY

WORLD METEOROLOGICAL ORGANIZATION

MAP-AQ

IRDR
Integrated Research on Disaster Risk

The First International Conference Chemical Weather and Chemical Climate (CWCC2023)

Science, Risks, Impacts, Health and Governance Associated with Multi-scale Environmental Perturbations

第一届化学天气与化学气候国际会议

多尺度环境扰动的科学认知、健康影响与风险治理

Chair's Report

主 席 报 告

October 16-20, 2023, Shanghai, China

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The First International Conference on Chemical Weather and Chemical Climate

Science, Risks, Impacts, Health and Governance Associated with Multi-scale Environmental Perturbations

Chair's Report

By **Renhe Zhang** (Vice-president, Fudan University), **Guy Brasseur** (Co-chair, Co-chair, Monitoring, Analysis, and Prediction of Air Quality), and **Jürg Luterbacher** (Director, Department of Science and Innovation; Chief Scientist, World Meteorological Organization)

The First International Scientific Conference on Chemical Weather and Chemical Climate (CWCC 2023), a premier platform for addressing the challenges of weather, climate, atmospheric environment and their impacts, was held on October 16-20 2023 in Shanghai, China. Bringing together around 400 distinguished researcher, students, early career scientists, policymakers, and stakeholders from 15 countries, the event fostered collaboration, advance science and knowledge exchange on various critical topics related to climate change mitigation, adaptation, air quality, and its impacts on sustainable development, including human health.

The conference successfully facilitated in-depth discussions and knowledge sharing on multiple key topics. Delegates reported on emissions and physical-chemical transformations of atmospheric components, simulation and forecasting of chemical weather/climate and their impacts, environmental and health consequences of air quality and weather/climate extremes, and strategies for reducing inequities. The conference also explored pathways towards environmental change mitigation and adaptation, development of climate-smart and sustainable cities, and coordinative governance approaches for climate-environment-health sustainability and carbon neutrality. Below show the summaries of all conference components and detailed agenda is attached in separate files.

Plenary talks

8 talks were delivered by top scientist in relevant fields, with focus on one of the four themes, (1) Air Quality and Climate: Science and Society Challenges for Sustainable Development, (2) Air Quality and Public Health: Science and Society Challenges for Sustainable Development, (3) Smart City Development: Science and Society Challenges in Sustainable Development, and (4) Global Governance to Achieve Carbon Neutrality and Clean Air. Their wonderful reports summarized the achievements, challenges and opportunities in the field of chemical weather and chemical climate research, science-based governance support, and future development prospects.

Session 1: Emissions and physical-chemical transformations of atmospheric components

27 talks were presented in this session, with a summary and conclusion by the session chairs.

The methodologies employed to study atmospheric trace gases and their chemical transformations have seen significant progress. While the basic methodologies remain largely unchanged, the focus has shifted towards higher resolution and high-precision characterization of atmospheric components. Particularly, there is a growing emphasis on understanding the sources of atmospheric trace gases, with a special emphasis on nitrogen-containing organic species. Emerging topics of significance include investigating the health effects of various atmospheric components and their combined toxicity. Researchers are increasingly interested in unraveling the relationship between ozone (O_3) and fine particulate matter ($PM_{2.5}$), as well as the broader interactions between O_3 and climate. Future priorities in this field include evaluating both the direct health effects of atmospheric components and the indirect health impacts stemming from extreme weather events and climate change induced by atmospheric chemical processes. This holistic

approach aims to provide a comprehensive understanding of the complex dynamics within the Earth's atmosphere and their implications for human health and environmental sustainability.

Session 2: Simulation and Forecasting of Chemical Weather/Climate and Its Impacts

27 talks were presented in this session. In summary, methodologies have taken a significant step forward with the integration of artificial intelligence (AI) into weather forecasting. AI-enhanced weather forecast models have marked a notable evolution, enabling more precise and reliable predictions. Another noteworthy development is the introduction of the WRF-GC model, representing a new generation of air quality models. This model incorporates advanced capabilities for simulating atmospheric chemistry, providing researchers with enhanced tools for understanding and predicting air quality dynamics. As for important and emerging topics, there is a growing emphasis on the prediction of extreme weather events. With the increasing frequency and intensity of such events, researchers are keen on developing models and methodologies that can better anticipate and mitigate their impact on communities and ecosystems. Looking ahead, future priorities in this field revolve around refining the accuracy of extreme weather prediction. This involves continuous improvement of forecasting models, on short-term and climate time-scales, harnessing the power of AI, and advancing our understanding of the complex interactions within the atmosphere. The goal is to provide more timely and reliable information to communities and policymakers, helping them make informed decisions and adapt to the challenges posed by a changing climate.

Session 3: Environmental and health impact of air quality, climate change, and weather/climate extremes

27 talks were presented in this session. In summary, methodological advancements in this field are witnessing a transformative shift with the integration of artificial intelligence (AI) and big data for monitoring and prediction purposes. These tools and technologies are revolutionizing our ability to collect, analyze, and interpret vast amounts of atmospheric data, leading to more accurate and timely predictions. In terms of important and emerging topics, researchers are increasingly focusing on the co-occurrence of extreme events, recognizing the interconnected nature of various atmospheric phenomena. Understanding the interactions between anthropogenic climate change and air pollution is another critical area of interest, given the complex interplay between these two environmental challenges. Furthermore, the health impacts of weather and climate extremes are emerging as a key research focus, as the frequency and intensity of such events continue to increase. Looking ahead, future priorities in this field involve promoting affordable technologies and solutions for monitoring and observation, particularly in low-income countries. Bridging the technological gap ensures that vulnerable regions have access to essential tools for assessing and addressing atmospheric challenges. Additionally, a health-oriented response to issues related to air quality, climate change, and weather/climate extremes is essential. Prioritizing public health considerations in policies and strategies will contribute to more effective mitigation and adaptation measures, creating a sustainable and resilient future.

Session 4: Advancing strategies to reduce climate-environment-health inequalities

21 talks were presented in this session. In summary, innovative methodologies are shaping a new frontier. One noteworthy development involves the combination of high spatiotemporal resolution air pollution exposure models with big data on public health. This integration allows for a more comprehensive understanding of the dynamic relationship between air quality and public health outcomes. Additionally, the development of Exposure Models tailored to account for complex environmental factors provides researchers with advanced tools to assess the intricate interplay between various environmental elements and human health. Furthermore, the application of Multi-state Statistical Models enables researchers to capture the complexity of environmental exposure scenarios and their impacts on health outcomes. Key and emerging topics in this field include a focus on inequality concerning multiple environmental exposures. Researchers are increasingly investigating how vulnerable populations are affected under

complex environmental conditions. This involves understanding the disparities in exposure and health outcomes among different demographic groups. Moreover, the exploration of policies and technical tools to reduce environmental exposure inequality is gaining prominence as societies seek to address and rectify environmental injustices. Looking ahead, future priorities in this field center around delving into the mechanisms of climate, environment, and health inequality. Understanding the pathways through which these inequalities manifest will be crucial for designing effective interventions to reduce inequality. Early identification and intervention techniques for climate, environment, and health inequalities are essential to developing strategies that promote environmental justice and protect the health of populations. These priorities reflect a commitment to creating equitable, just and sustainable environments for current and future generations.

Session 5: Towards mitigation and adaptation to environmental changes

25 talks were presented in this session. In summary, advancements in methodologies in this field highlight a shift towards holistic and sustainable approaches. One notable development is the adoption of nature-based solutions, recognizing the importance of leveraging natural processes to address environmental challenges. Additionally, vulnerability and exposure analyses and assessments have gained prominence, offering comprehensive insights into the risks and susceptibilities of various regions and communities. Complementing this trend, there is an increasing emphasis on people-centered approaches, recognizing the critical role of local communities in environmental conservation and climate resilience. Key and emerging topics in this field include the formulation of science-based mitigation strategies to combat climate change and other environmental threats. Nature-based adaptation measures are also gaining attention as researchers explore sustainable solutions that harness the inherent resilience of ecosystems. Understanding the synergies and trade-offs among different regions, living beings, and the environment is essential for developing nuanced and effective environmental policies. Looking ahead, future priorities involve education and capacity development related to climate change, environmental change, and sustainable development. Building knowledge and skills in these areas is crucial for fostering a global community equipped to tackle the various challenges. Additionally, establishing mechanisms for science-based advisories, including frameworks, networks, and working processes, will be essential for translating research findings into actionable policies. Collaboration among multi-stakeholders, including governments, businesses, and civil society, is key to fostering a collective and coordinated response to global environmental issues.

Session 6: Towards the development of climate-smart and sustainable cities

22 talks were presented in this session. In summary, important and emerging topics in this field revolve around the complex interplay between air quality, climate interactions, and risk management in cities, particularly in the face of extreme events and climate changes. Understanding how these factors impact urban infrastructures and residents is critical for developing effective risk mitigation and adaptation strategies. There is a noticeable shift towards a multidisciplinary, multi-hazard, and integrated approach to urban weather, environment, and climate systems and services. This approach recognizes the interconnectedness of various factors influencing urban comfort, resilience and sustainability. Future priorities include a deeper understanding of the complex dynamics within urban areas. This involves integrating urban services and placing a greater emphasis on impact-based forecasting to enable targeted strategies for vulnerable groups. Building resilience to reduce the vulnerability of urban infrastructure and exposure of city dwellers is paramount for improving overall living conditions and public health. Bridging the gap between scientific research and practical urban solutions is a priority, emphasizing the need for actionable and evidence-based policies. Furthermore, experience sharing between cities is crucial for creating a collaborative network where lessons learned, best practices, and innovative solutions can be exchanged. This collective approach fosters a global community dedicated to addressing the unique environmental challenges faced by urban areas.

Session 7: Collaborative Pathways for Climate-Environment-Health Governance

The roundtable discussion recognized future priorities in this field involving an increased understanding of the interactions between climate change, air pollution, and public health. This includes exploring the nuanced linkages between air pollution and different health risks throughout the entire life cycle of individuals. All-cause analyses and assessments, regularly published, will be crucial for providing up-to-date and comprehensive insights into the multifaceted impacts of environmental risks. Moreover, there is a need to address equity and social justice in the governance of different strategies and solution pathways. Recognizing the diverse impacts of environmental risks on various communities and demographics, future priorities include developing better governance structures that prioritize equity. Placing the public at the core position of governance structures ensures that environmental policies are inclusive, responsive, and considerate of the diverse needs and vulnerabilities of different populations.

Session 8: Coordinative pathways for climate-environment-carbon neutrality governance

The roundtable discussion recognized future priorities in this field involve developing better models that can effectively link the physical world and our society. This includes creating comprehensive frameworks that capture the intricate relationships between environmental factors and societal responses. Seeking optimal options for the future, considering different uncertainties, is also a priority. This involves leveraging existing knowledge to make informed decisions in the face of unknowns and unpredictability. Additionally, there is a need for a better understanding of the policy impact arising from physical, social, and public responses to climate and environmental challenges. This holistic perspective considers the broader implications of policy decisions on both the physical environment and the communities affected. Moreover, paying attention to the tradeoffs between security targets in different domains is critical for informed decision-making. Balancing security considerations across various domains, such as environmental, social, and economic, requires a nuanced understanding of the potential tradeoffs and synergies.

Session 9: Global partnerships and cooperation with stakeholders in the interdisciplinary area

The roundtable discussion recognized future priorities including a deeper understanding of the cascading and systemic nature of climate change and its impacts. This requires a comprehensive examination of how climate-related changes can have far-reaching consequences across various sectors and regions. Addressing inequalities and marginalization in climate actions is another key priority, ensuring that climate policies consider and rectify social disparities and vulnerabilities. Conducting a comprehensive assessment of the status of global partnerships on risk inter-connectivity and governance on climate change and public health is essential for identifying existing gaps and areas for improvement. In the current situation and in the future, it is important to focus on both and look for a balance between the mitigation and adaptation strategies. Promoting interdisciplinary research collaboration and knowledge exchange will further enhance our ability to address complex environmental challenges. Additionally, fostering multi-stakeholder dialogue and collaboration at the science-policy-practice interface is critical. Ensuring that the voice of science is heard by policymakers and society at large is imperative for implementing effective and informed environmental policies.

Side events

In addition to the above sessions, 3 side events were held during or after the conference, to discuss the how to strengthen the cooperation between organizations in the relevant field.

(1) WCRP URB-RCC and cooperation planning
(2) WMO GAW ARCH Lunch Meeting

(3) National Stakeholder Awareness Workshop in P.R. China on EANET

Poster session

80 posters were displayed in the poster venue, and there were thorough communications and discussions with the participants. 15 outstanding posters were honored.

Young scientist award

The conference recognized the importance to encourage early career scientists to engage in interdisciplinary studies and fostered a collaborative environment. This Young Scientist Awards, is to recognize the remarkable achievements of young scientists (within 10 years of receiving their Ph.D. degree) who have made significant and original contributions to the fields of climate change, atmospheric environment, and public health. Three outstanding young scientists were awarded.

Conclusion and recommendations

The CWCC 2023 concluded with a strong sense of commitment by addressing the multifaceted challenges of chemical weather and chemical climate. The conference served as a catalyst for new collaborations and implementing evidence-based solutions towards sustainable development and a healthier, resilient future for all.

Specifically, the major recommendations and advocacy points include the following items:

(a) Comprehensive Emission Inventories: Advocate for the development and maintenance of comprehensive emission inventories that accurately track atmospheric component emissions from various sources, including residential activities, industrial processes, and natural sources. These inventories are essential for understanding the behavior of pollutants in the atmosphere. Emphasize the importance of robust measurement techniques and modeling to understand the behavior of pollutants.

(b) Advanced Simulation and Forecasting: Promote the use of advanced simulation and forecasting models for chemical weather and climate to enhance understanding of complex interactions between chemical species and meteorological conditions. Encourage the continued advancement of simulation and forecasting models for chemical weather and climate based on seamless integrated approach of Earth System modelling. These models should incorporate the complex interactions between chemical species and meteorological conditions to provide more accurate predictions of atmospheric conditions and air pollution levels. Encourage the application of these models for assessing emission reduction strategies.

(c) Stringent Air Quality Standards: Advocate for the adoption and enforcement of stringent air quality standards to protect public health. Highlight the adverse effects of poor air quality on respiratory and cardiovascular health, emphasizing the urgency of these measures.

(d) Addressing Inequities: Promote strategies for reducing inequities related to air quality, climate change impacts, and weather/climate extremes. Encourage inclusive policy development, community engagement, and equitable access to resources and information.

(e) Mitigation and Adaptation: Stress the importance of both mitigation and adaptation strategies to address environmental changes effectively. Share best practices in reducing greenhouse gas emissions, enhancing carbon sinks, and transitioning to renewable energy sources. Focus on adaptive measures to minimize the impacts of climate change and weather extremes.

(f) Climate-Smart Cities: Highlight the role key of cities in sustainable development and addressing climate change and air quality challenges. Advocate for strategies like urban planning, green infrastructure, and sustainable transportation to create climate-smart and sustainable cities. Emphasize integrated urban services, multi-stakeholder collaborations and knowledge-sharing among cities.

(g) Coordinated Governance: Highlight the need for coordinated governance approaches to address interconnected challenges in climate, environment, and health for sustainable development. Strengthen institutional coordination, promote climate and environment changes related risk interconnectivity considerations into policy-making. Promote and support interdisciplinary research and partnerships among governments, international organizations, academia, and civil society.

(h) Carbon Neutrality Governance: Promote coordinated pathways for governance to achieve carbon neutrality. Focus on policy frameworks, technological innovations, and economic incentives for transitioning to a low-carbon economy. Support international cooperation and capacity-building efforts for developing countries.

(i) Global Partnerships: Highlight the importance of global partnerships and collaboration among stakeholders to address complex chemical weather and climate challenges. Encourage knowledge exchange, data sharing, and

capacity-building initiatives. Stress the need for crosscutting approaches that combine scientific research, policy development, and community engagement.

(j) Support for Early-Career Scientists: Continue to actively involve and encourage early career scientists in interdisciplinary studies. Recognize their contributions and potential as future leaders in addressing chemical weather and climate challenges. Provide opportunities for mentorship and career development.

(k) Promotion of Knowledge Exchange: Emphasize the importance of knowledge exchange through poster sessions and discussions. Promote communication and collaboration among participants to facilitate the sharing of ideas and research findings.

Acknowledgments

We extend our heartfelt gratitude to the conference organizers, relevant government agencies, members of the Academic and Organizing Committees, speakers, sponsors, supporting organizations, conveners and all participants whose dedication and contributions made this event a resounding success. Their unwavering commitment to advancing scientific knowledge and promoting collaboration is sincerely appreciated.

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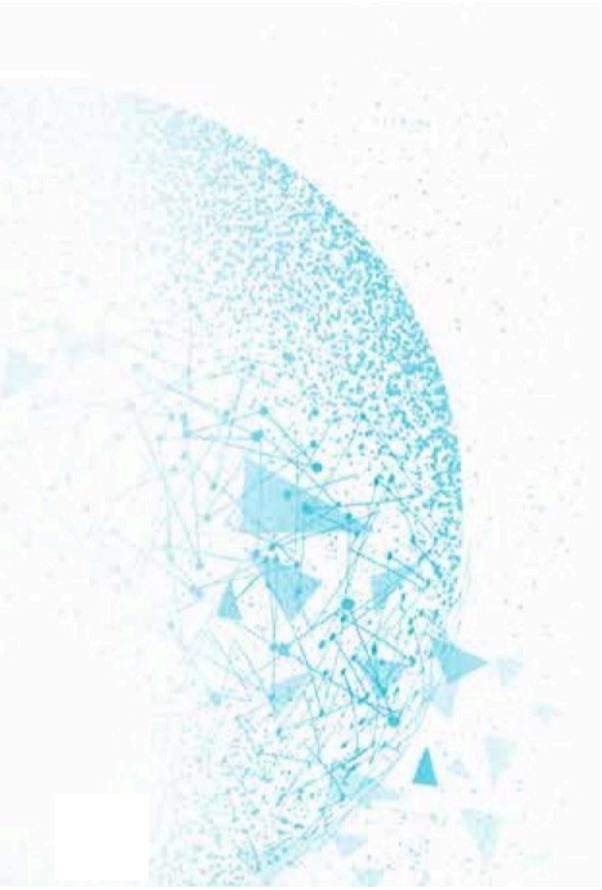

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Conference Agenda

17th Oct.	Oriental Hall 1						
Opening Session (08:30-09:30)	*Moderator: Renhe Zhang*						
Time	**Opening Remarks**						
08:30-09:30	Li Jin, President, Fudan University Jürg Luterbacher, Director, Department of Science and Innovation; Chief Scientist, World Meteorological Organization Bert Fabian, EANET Coordinator, United Nations Environment Programme Guy Brasseur, Co-chair, Monitoring, Analysis, and Prediction of Air Quality Motoko Kotani, Vice President for Science and Society, International Science Council; Integrated Research on Disaster Risk Laksana Tri Handoko, Chairman, Badan Riset dan Inovasi Nasional Bing Ke, Vice Director, Administrative Centre for China's Agenda 21 Wenlan Xie, Vice Director, Science and Technology Commission of Shanghai Municipality						
Plenary Session I: Plenary Talks (09:30-12:30)	*Moderator: Jürg Luterbacher*						
Time	**Presentation Title**					**Invited Speaker**	
09:30-10:00	Related to chemical climate and chemical weather: Carbon sources and sinks inversion in CMA and The development of CMA Chemical Weather Operational Forecasting System					Xiaoye Zhang	
10:00-10:30	Advancing Atmospheric Composition Analysis and Predictions and Related Services to Meet the Growing Societal Needs					Greg Carmichael	
10:30-11:00	*Break*						
11:00-11:30	Lessons learnt and future prospects in air quality, emissions and chemical climate research					Jenny Stavrakou	
11:30-12:00	Development and application of multi-resolution global carbon emission database					Kebin He	
12:00-12:30	Air Quality and Public Health: How to "Close This Discussion"					Lidia Morawska	
12:30-13:30	*Lunch & Poster Session*						
Parallel Session I-VI (13:30-18:00)							
13:30-18:00	Session I Conference Room 1	Session II Conference Room 2	Session III Conference Room 3	Session IV Conference Room 6	Session V Conference Room 5	Session VI Conference Room 7	
18:30-20:00	*Welcome Dinner*						
18th Oct.							
Parallel Session I-VI & Side Meeting (08:30-12:30)							
08:30-12:30	Session I (Continue) Conference Room 1	Session II (Continue) Conference Room 2	Session III (Continue) Conference Room 3	Session IV (Continue) Conference Room 6	Session V (Continue) Conference Room 5	Session VI (Continue) Conference Room 7	Side Meeting Shanghai Hall
12:30-13:30	*Lunch*						

Parallel Session VII-IX (13:30-18:00)			
13:30-18:00	Session VII (Round-table Discussion) Conference Room 1	Session VIII (Round-table Discussion) Conference Room 2	Session IX (Round-table Discussion) Conference Room 3
12:00-18:00	*Poster Session*		
18:30-19:30	*Dinner*		

19th Oct.		**Oriental Hall 1**
Plenary Session I: Plenary Talks (08:30-10:00)		***Moderator: Guy Brasseur***
Time	**Presentation Title**	**Invited Speaker**
08:30-09:00	Maximizing the Health Benefits of Air Pollution Control and Climate Change Mitigation	Tong Zhu
09:00-09:30	Towards the development of climate-friendly and sustainable cities: critical issues and strategies	Tao Wang
09:30-10:00	On the importance of continuous/long-term comprehensive observations: From local clustering to regional air quality and global climate	Markku Kulmala
10:00-10:30	*Coffee Break*	

Plenary Session II: Session outcome sharing and recommendations (10:30-12:30)			
Time	**Session**	**Session Chairs**	**Moderators**
10:30-10:38	I	Greg Carmichael/Lin Wang	Jianmin Chen
10:38-10:46	II	Zhanqing Li/Qiang Zhang	Jianmin Chen
10:46-10:54	III	Mu Mu/Gunter Schumann	Jianmin Chen
10:54-11:02	IV	Hartmut Herrmann/Qingyan Fu	Jianmin Chen
11:02-11:10	V	Shiro Hatakeyama/Gang Yan	Jianmin Chen
11:10-11:18	VI	Alexander Baklanov/Tao Wang	Haidong Kan
11:18-11:26	VII	Tong Zhu/Ho Kim	Haidong Kan
11:26-11:34	VIII	Kebin He/Bert Fabian	Haidong Kan
11:34-11:42	IX	Qunli Han/Xu Tang/Representative of IFRC	Haidong Kan
11:42-11:50	X	Yijun Zhang/Liwu Zhang	Haidong Kan
11:50-12:30	Discussions, Q&A		Greg Carmichael/ Alexander Baklanov
12:30-14:00	*Lunch for all and Lunch Meeting organized by GAW-ARCH for invited participants*		

Closing Session (14:00-16:00)	***Moderator: Renhe Zhang***
14:00-14:20	Young Scientist Award *(Renhe Zhang, Guy Brasseur, Greg Carmichael)*
14:20-14:40	Best Student Presentation Award *(Representative of Environmental Science: Atmospheres)*
14:40-15:20	Chair's Report *(Guy Brasseur)*
15:20-16:00	Closing Remarks, chaired by Renhe Zhang Closing Panelists (2 minutes each): *Guy Brasseur (MPI-M), Greg Carmichael (UIOWA), Alexander Baklanov (WMO), Bert Fabian (EANET/UNEP), Qunli Han (IRDR IPO), Albert Sulaiman (BRIN), Tong Zhu (PKU), Hong Liao (NUIST), Hartmut Herrmann (Leibniz Institute for Tropospheric Research), Gunter Schumann (Charite University Medicine Berlin/FDU), Christian Alain George (Institut de Recherches sur la Catalyse et l'Environnement de Lyon, IRCELYON, CNRS), Mellouki Abdelwahid (Centre national de la recherche scientifique), Jianmin Chen (FDU), and Others.*

Parallel Sessions

Session I: Emissions and physical-chemical transformations of atmospheric components

Time:

Oct.17th 13:30-18:05 & Oct. 18th 08:30-12:10

Chair/Co-Chair:

Greg Carmichael, University of Iowa/WMO Global Atmospheric Observing Program

Lin Wang, Fudan University

Convenors:

Defeng Zhao, Fudan University

Bo Yao, Fudan University

Yele Sun, Institute of Atmospheric Physics, CAS

Xinlei Ge, Nanjing University of Information Science and Technology

Meng Gao, Hong Kong Baptist University

Description:

Focusing on the critical issues and recommendations on emissions and physical-chemical transformations of atmospheric components:

1) Measurement of emissions and development of inventories

2) Understanding atmospheric transformations and their impacts

3) Identifying emission reduction strategies

Part I: Oct.17th 13:30–15:25			Conference Room 1
Host: Greg Carmichael, Lin Wang			
Time	**Reporter**	**Organization**	**Report Title**
13:30-13:50	Mei Zheng (Keynote)	Peking University	Change of Atmospheric Composition and Its Health Effects
13:50-14:10	Harmut Herrman (Keynote)	Leibniz Institute for Tropospheric Research	Recent progress in aerosol particle chemistry: Woodburning SOA, viruses and nanoplastics
14:10-14:25	Lin Zhang	Peking University	Reactive nitrogen emissions and their impacts on atmospheric environment
14:25-14:40	Sasho Gligorovski	Guangzhou Institute of Geochemistry, CAS	Daylight chemistry on building surfaces as an additional pollution source in urban air
14:40-15:55	Dantong Liu	Zhejing University	Connecting the Light Absorption of Atmospheric Organic Aerosols with Oxidation State and Polarity
14:55-15:10	Xiaopu Lyu	Hong Kong Baptist University	A synergistic ozone-climate control to address emerging ozone pollution challenges
15:10-15:25	Xiaofei Wang	Fudan University	Production mechanism of spray aerosol and its environmental impacts
15:25-15:50 Tea break			
Part II: Oct.17th 15:50–18:05			**Conference Room 1**
Host: Bo Yao, Defeng Zhao			
15:50-16:10	Maheswar Rupakheti (Keynote)	Research Institute for Sustainability - Helmholtz Centre Potsdam	Climate implications of changing aerosols in Asian aerosol dipole regions
16:10-16:30	Xuemei Wang (Keynote)	Jinan University	Reconstruction of Non-agricultural Ammonia Emission Inventory Based on Isotopic Source Apportionment in China
16:30-16:50	Huilin Chen (Keynote)	Nanjing University	Understanding emissions of N2O and CH4 from urban area using airborne observations
16:50-17:05	Xuekun Fang	Zhejiang University	Study on emission estimate of halogenated greenhouse gas based on inverse modelling
17:05-17:20	Yu Huang	Institute of Earth Environment, CAS	Technology and Application of Air Purification in Human Settlements
17:20-17:35	Ying Li	Southern University of Science and Technology	The aerosol-photolysis interaction of carbonaceous aerosol control on ozone pollution
17:35-17:50	Chunlin Li	Tongji University	Redox potential and toxicity evolutions of biomass burning HULIS in the air and in lung fluid mimics
17:50-18:05	Jingxin Lin	Fudan University	Nitroaromatics species in gas-phase and particles characterized by NO_3^--CI-Orbitrap and VACES-Orbitrap

Part III: Oct. 18th 08:30–10:10			Conference Room 1
Host: Yele Sun, Qi Chen			
Time	**Reporter**	**Organization**	**Report Title**
08:30-08:50	Christian George (Keynote)	CNRS-IRCELYON	Spontaneous interfacial oxidant formation as a key driver for aerosol oxidation
08:50-09:10	Weigang Wang (Keynote)	Institute of Chemistry, CAS	Secondary aerosol formation and its environmental impact
09:10-09:25	Qi Chen	Peking University	Molecular characteristics and chemical evolution of organic nitrates in urban Beijing
09:25-09:40	Xinlei Ge	Nanjing University of Information Science and Technology	Enhancing characterization of organic nitrogen components in aerosols and droplets using high-resolution aerosol mass spectrometry
09:40-09:55	Ke Li	Nanjing University of Information Science and Technology	Some principles and practice of joint $PM_{2.5}$-ozone control strategy
09:55-10:10	Dandan Huang	Shanghai Academy of Environmental Sciences	Obscured Contribution of Oxygenated Intermediate-Volatility Organic Compounds to Secondary Organic Aerosol Formation from Gasoline Vehicle Emissions
10:10-10:30 Tea break			
Part IV: Oct. 18t^th 10:30–12:10			**Conference Room 1**
Host: Xinlei Ge, Meng Gao			
10:30-10:05	Douglas Worsnop (Keynote)	Helsinki University	Atmospheric Aerosol: Climate and Air Quality
10:50-11:10	Yanlin Zhang (Keynote)	Nanjing University of Information Science and Technology	Stable isotope tracers for aerosol chemistry: recent progresses and challenges
11:10-11:25	Xinhui Bi	Guangzhou Institute of Geochemistry, CAS	Molecular characteristics of organics in cloud water by Fourier transform ion cyclotron resonance mass spectrometry
11:25-11:40	Shaojie Song	Nankai University	Multi-scale chemical transport modeling of hydroxymethanesulfonate (HMS) aerosol
11:40-11:55	Wei Tao	Southern University of Science and Technology	Tagging-based source attribution of extended odd oxygen family (Oy) to volatile organic compounds (VOCs): a case study of heavy ozone pollution episode over the East China
11:55-12:10	Yuwei Wang	Fudan University	Formation of aromatics-derived HOMs and their ambient observation

Parallel Sessions

Session II:
Simulation and forecasting of chemical weather/climate and its impacts

Time:

Oct.17th 13:30-18:00 & Oct. 18th 08:30-12:15

Chair/Co-Chair:

Zhanqing Li, University of Maryland

Qiang Zhang, Tsinghua University

Convenors:

Peng Wang, Fudan University

Yan Zhang, Fudan University

Yuchao Gao, Fudan University

Xin Huang, Nanjing University

Jianlin Hu, Nanjing University of Information Science and Technology

Description:

Focusing on the critical issues and recommendations on simulation and forecasting of chemical weather/climate and its impacts:

1) Improving modeling capabilities;

2) Forecasting extreme events;

3) Assessing impacts on ecosystems and human health.

Part I: Oct.17th 13:30–15:25			Conference Room 2
Host: Tzung-May Fu, Peng Wang			
Time	**Reporter**	**Organization**	**Report Title**
13:30-13:50	Tzung-May Fu (Keynote)	Southern University of Science and Technology	Development and application of the WRF-GC chemistry-meteorology model for regional air quality studies
13:50-14:10	Shaocai Yu (Keynote)	Zhejiang University	The direct and indirect shortwave radiative flux response to an injection of sea salt aerosols over the large-scale ocean: A model test
14:10-14:25	Xing Li	Shaanxi Normal University	Impacts of Biomass Burning in Peninsular Southeast Asia on PM2.5 Concentration and Ozone Formation in Southern China During Springtime—A Case Study
14:25-14:40	Yuting Wang	Hong Kong Polytechnic University	High-resolution modeling for air quality in Hong Kong using Large-eddy simulation (LES)
14:40-14:55	Junfeng Wang	Nanjing University of Information Science and Technology	Aqueous production of sulfur-containing aerosols from nitroaromatic compounds and SO_2 in winter Beijing haze
14:55-15:10	Jiawei Li	Institute of Atmospheric Physics, CAS	Regional chemistry-climate coupled model development
15:10-15:25	Aoxing Zhang	Southern University of Science and Technology	Deep learning-based ensemble forecasts and predictability assessments for surface ozone pollution
15:25-15:50 Tea break			
Part II: Oct.17th 15:50–18:05			**Conference Room 2**
Host: Zhijin Li, Yang Gao			
15:50-16:10	Shanling Gong (Keynote)	Chinese Academy of Meteorological Sciences	Extreme weather and ozone in China
16:10-16:30	Shuxiao Wang (Keynote)	Tsinghua University	Impact of anthropogenic emissions and climate change on air Quality and health in China
16:30-16:50	Sri Kota (Keynote)	Indian Institute of Technology, Delhi	Forecasting Carbon Monoxide Concentration in India using Physics-Informed Machine Learning Models
16:50-17:05	Yang Gao	Ocean University of China	Improved simulations of climate extremes and air quality based on a high-resolution Earth system model
17:05-17:20	Mengjiao Jiang	Chengdu University of Information Technology	Model-based insights into aerosol perturbation on pristine continental convective precipitation
17:20-17:35	Yuxing Yun	Chinese Academy of Meteorological Sciences	Temporal and Spatial Variations of the Effects of Aerosols on Clouds and Precipitation in An Extreme-Rain-Producing MCS in South China
17:35-17:50	Yuchao Gao	Fudan University	Applications of an aerosol microphysical model in a changing climate
17:50-18:05	Zhenze Liu	Nanjing University of Information Science and Technology	Benefits of Net Zero policies for future ozone pollution in China

Part III: Oct. 18th 08:30–10:10			Conference Room 2
Host: Jianlin Hu, Yan Zhang			
Time	**Reporter**	**Organization**	**Report Title**
8:30-8:50	Weijun Li (Keynote)	Zhejiang University	Radiative absorption by black carbon in response to particle mixing structure
8:50-9:10	Chunhong Zhou (Keynote)	Chinese Academy of Meteorological Sciences	Chemical Weather modeling, haze-fog, sand and dust storm
9:10-9:25	Zengliang Zang	National University of Defense Technology	Multi-scale three-dimensional variational data assimilation and forecast for high-resolution aerosol observations
9:25-9:40	Qindan Zhu (Online)	Massachusetts Institute of Technology	Interpreting continental-scale decadal trends in OH
9:40-9:55	Diljit Kumar Nayak	Indian Institute of Technology, Delhi	Projection of change in radiative forcing for years 2019 and 2026 and its implications on climate under the business-as-usual emission scenario: A need for emission reduction scenario under National Clean Air Program (NCAP)
9:55-10:10	Lei Chen	Nanjing University of Information Science and Technology	Process-level quantification on opposite $PM_{2.5}$ changes during COVID-19 lockdown over North China Plain
10:10-10:30 Tea Break			
Part IV: Oct. 18th 10:30–12:15			**Conference Room 2**
Host: Yang Yang, Yuchao Gao			
10:30-10:50	Chun Zhao (Keynote)	University of Science and Technology of China	Development of high-resolution atmospheric model and its application in studying aerosol effect
10:50-11:10	Rejash Kumar (Keynote, Online)	National Center for Atmospheric Research	Enhancing accuracy of short-term air quality predictions and quantifying their uncertainties by integrating air quality models with multi-platform observations
11:10-11:25	Yang Yang	Nanjing University of Information Science and Technology	Climate effects of future aerosol reductions for achieving carbon neutrality
11:25-11:40	Lichao Yang	Institute of Atmospheric Science, CAS	Toward targeted observations of the meteorological initial state for improving the PM2.5 forecasts in the Beijing-Tianjin-Hebei region
11:40-11:55	Riya Su	Hulunbuir University	Prediction of $PM_{2.5}$ concentration in Ulaanbaatar with deep learning models
11:55-12:10	Xiaoli Wei	Shanghai Meteorological Service	Global aerosol typing classification using a new hybrid algorithm utilizing Aerosol Robotic Network data

Parallel Sessions

Session III:

Environmental and health impact of air quality, climate change, and weather/ climate extremes

Time:

Oct.17th 13:30-18:10 & Oct. 18th 08:30-12:10

Chair/Co-Chair:

Mu Mu, Fudan University

Gunter Schumann, Charetti Medical University/Fudan University

Convenors:

Wen Zhou, Fudan University

Xiaoyan Wang, MAP-AQ Asian Regional Office

Jicheng Gong, Peking University

Siyu Chen, Lanzhou University

Feng Zhang, Fudan University

Description:

Focusing on the critical issues and recommendations on environmental and health impact of air quality, climate change, and weather/climate extremes:

1) Assessing health risks of air pollution, climate change

2) Vulnerability and adaptation

3) Ecosystem Impact of extreme weather/climate

Part I: Oct.17th 13:30–15:25			Conference Room 3
Host: Huizheng Che, Jicheng Gong			
Time	**Reporter**	**Organization**	**Report Title**
13:30-13:50	Hong Liao (Keynote)	Nanjing University of Information Science and Technology	Winter particulate pollution severity in North China: Dominant climate drivers and seasonal prediction
13:50-14:10	Johnny C. L. Chan (Keynote)	Asia-Pacific Typhoon Collaborative Research Center	Future landfalling tropical cyclone activity in East Asia
14:10-14:25	Jinyuan Xin	Institute of Atmospheric Physics, CAS	The atmospheric boundary layer structure over complex terrain and its influence in regulating local environment
14:25-14:40	Qing Li	Fudan University	Health-oriented control of aerosol emissions from anthropogenic sources in China
14:40-14:55	Yong Wang	Tsinghua University	Fire heat significantly alleviates the negative impacts of western U.S. wildfires on air pollution and health risks
14:55-15:10	Lei Zhu	Southern University of Science and Technology	Observing network effect of shipping emissions from space: a natural experiment in the world's busiest port
15:10-15:25	Changqin Yin	Shanghai Meteorological Bureau	Evaluation on WRF/Chem forecasting driving by three global NWPs from GFS, EC and grapes
15:25-15:50 Break			
Part II: Oct.17th 15:50–18:10			**Conference Room 3**
Host: Aijun Ding, Qing Li			
15:50-16:10	Zhanqing Li (Keynote)	University of Maryland	Global air quality monitoring from satellites with spotlights in China and US
16:10-16:30	Aijun Ding (Keynote)	Nanjing University	Interactions of Atmospheric Chemistry and Atmospheric Boundary Layer: From Megacity to Gigacity
16:30-16:50	Huizheng Che (Keynote)	Chinese Academy of Meteorological Sciences	Optical and radiative properties of aerosols: observation methods, technical applications, and meteorological science research
16:50-17:10	Lei Zhou (Keynote)	Shanghai Jiao Tong University	Impacts of subsurface ocean variabilities on tropical cyclone genesis
17:10-17:25	Ken Yamashita	Asia Center for Air Pollution Research	Challenge of EANET for the atmospheric environment in East Asia
17:25-17:40	Feng Zhang	Fudan University	Artificial intelligence technology to retrieve cloud properties using geostationary satellite measurements
17:40-17:55	Fan Cheng	Beijing Normal University	Satellite-derived diurnal surface ozone variations across China with artificial intelligence: air quality and phytotoxicity implications
17:55-18:10	Shifen Xu	Agilent Technologies	Agilent Exposomics solutions in Environmental studies

Part III: Oct. 18th 08:30–10:10			Conference Room 3
Host: Haidong Kan, Jiandong Wang			
Time	**Reporter**	**Organization**	**Report Title**
8:30-8:50	Qiang Zhang (Keynote)	Tsinghua University	Drivers and health impacts of China's air quality during last two decades
8:50-9:10	Tianmu Chen (Keynote)	Xiamen University	Climate change and early warning of emerging infectious diseases
9:10-9:25	Meng Gao	Hong Kong Baptist University	Co-occurrence of heat and air pollution extremes in China: historical trends, interactive health effects and seasonal prediction
9:25-9:40	Zhicong Yin	Nanjing University of Information Science and Technology	Changes in dominant patterns of summer ozone pollution in the east of China and roles of climate variabilities
9:40-9:55	Jiandong Wang	Nanjing University of Information Science and Technology	Black-carbon-induced regime transition of boundary layer development strongly amplifies severe haze
9:55-10:10	Jian Xu	National Space Science Center, CAS	Monitoring Tropospheric Air Pollutants from Newly-launched Satellite Sensors
10:10-10:30 Tea Break			
Part IV: Oct. 18th 10:30–12:10			**Conference Room 3**
Host: Tianmu Chen, Siyu Chen			
10:30-10:50	Haidong Kan (Keynote)	Fudan University	Air pollution and daily mortality: from PAPA to MCC studies
10:50-11:10	Tiantian Li (Keynote)	Chinese Center for Disease Control and Prevention	Extreme Weather Events and Human Health
11:10-11:25	Yun Hang (Online)	University of Texas Health Science Center at Houston	Assessment of long-term particulate nitrate air pollution and its health risk in China
11:25-11:40	Lulu Lian	Lanzhou University	Urbanization and population aging exacerbated the health economic impacts of anthropogenic dust fine particulate matter pollution
11:40-11:55	Xiaojing Shen	Chinese Academy of Meteorological Sciences	Long-term measurements of particle number size distributions in China and its applications in chemical weather numerical model
11:55-12:10	Guocheng Wang	Zhejiang University	Response of $PM_{2.5}$-bound elemental species to emission variations and associated health risk assessment during the COVID-19 pandemic in a coastal megacity

Parallel Sessions

Session IV:
Advancing strategies to reduce climate-environment-health inequalities

Time:

Oct.17th 13:30-17:30 & Oct. 18th 08:30-12:10

Chair/Co-Chair:

Hartmut Herrmann, Leibniz Institute for Tropospheric Research, Leibniz, Germany

Qinyan Fu, Shanghai Academy of Environmental Sciences

Convenors:

Renjie Chen, Fudan University

Ruwei Hu, Sun Yat-Sen University

Wei Xia, Huazhong University of Science and Technology

Mochammad Syarif Romadhon, BRIN, Indonesia.

Sri Kota, Indian Institute of Technology, Delhi

Description:

Focusing on the critical issues and recommendations on strategies for reducing inequities:

1) Environmental justice;

2) Access to clean air and climate services

3) Multi-stakeholder participation and decision-making

Part I: Oct.17th 13:30–15:10			Conference Room 6
Host: Hartmut Hartmut, Qingyan Fu			
Time	**Reporter**	**Organization**	**Report Title**
13:30-13:50	Yuming Guo (Online)	Monash University	Inequity of environmental exposure and health impacts
13:50-14:10	Qingyan Fu	Shanghai Academy of Environmental Sciences	Monitoring and health effects of transportation related air pollutants in Shanghai
14:10-14:30	Hualiang Lin	Sun Yat-Sen University	Air pollution associated with incident major chronic diseases, multimorbidity, and subsequent dementia
14:30-14:50	Qi Zhao	Shandong University	Contribution of human-induced climate change on the risk of dengue incidence in China and Brazil
14:50-15:10	Xia Meng	Fudan University	Characteristics of disparity in $PM_{2.5}$ and NO_2 pollution in China
15:10-15:50 Tea Break			
Part II: Oct.17th 15:50–17:50			**Conference Room 6**
Host: Mochammad Syarif Romadhon, Ruwei Hu			
15:50-16:10	Bin Han	Chinese Research Academy of Environmental Sciences	A randomized, blinded, crossover intervention study of traffic-related air pollution (TRAP) and cardiovascular effects in healthy adults
16:10-16:30	Tao Liu	Jinan University	The inequalities in the environmental changes and human health under different spatial scales in China
16:30-16:50	Tao Xue	Peking University	Health inequality embedded in air pollution exposure is co-determined by climate and anthropogenic factors
16:50-17:10	Yi Zhang	Chinese Center for Disease Control and Prevention	Effects of Ambient Fine Particulate Matter Constituents on Cardiovascular Health Vary Among Different Population Groups
17:10-17:30	Lauri Myllyvirta (Online)	Centre for Research on Energy and Clean Air	Health benefits of Just Energy Transition and coal phase-out in Indonesia
17:30-17:50	Wei Xia	Huazhong University of Science and Technology	Global trend risk assessments of trihalomethanes in drinking water and its attributable disease burden of bladder cancer

Part III: Oct. 18th 08:30–10:10			Conference Room 6
Host: Sri Kota, Wei Xia			
Time	**Reporter**	**Organization**	**Report Title**
08:30-08:50	Kai Chen (Online)	Yale University	Health Equity of Heat and Air Pollution in the United States
08:50-09:10	Jovine Bachwenkizi	Muhimbili University of Health and Allied Sciences	Framework for Assessment of Climate Change and Environmental Health Inequalities in sub-Saharan African Countries
09:10-09:30	Jue Liu	Peking University	Inequalities in human resources for health, climate factors and the impact on infectious diseases
09:30-09:50	Chongjian Wang	Zhengzhou University	$PM_{2.5}$ and its components and cardiovascular diseases in rural areas
09:50-10:10	Yuewei Liu	Sun Yat-Sen University	Widowhood aggravates adverse effects of ozone and heat waves on cardiovascular disease mortality
10:10-10:30 Tea Break			
Part IV: Oct. 18th 10:30–12:10			**Conference Room 6**
Host: Jovine Bachwenkizi, Renjie Chen			
10:30-10:50	Hao Xiang	Wuhan University	Inequality in the health effects of ambient ozone exposures
10:50-11:10	Bin Luo	Lanzhou University	Health impacts analysis of extreme weather events in a typical Arid area of China
11:10-11:20	Jiao Wang	Chinese Center for Disease Control and Prevention	Study on prediction of human Norovirus outbreaks based on meteorological factors
11:30-11:30	Shirui Chen	Sun Yat-Sen University	The joint associations of $PM_{2.5}$ and its components with cerebrovascular disease hospitalization: Results from a large community-based cohort
11:50-12:10	Sijia Lou	Nanjing University	Shift in peaks of PAH-associated health risks from East Asia to South Asia and Africa in the future

Parallel Sessions

Session V:
Towards mitigation and adaptation to environmental changes

Time:

Oct.17th 13:30-17:35 & Oct. 18th 08:30-12:10

Chair/Co-Chair:

Shiro Hatakeyama, Asian Center for Air Pollution Research (ACAP)

Gang Yan, Environmental Planning Institute, Ministry of Ecology and Environment

Convenors:

Zhiyan Zuo, Fudan University

Guoxing Chen, Fudan University

Yuqiang Zhang, Shandong University

Jianzhong Xu, Northwest Institute of Eco-Environment and Resources, CAS

Xue Qiao, Sichuan University

Description:

Focusing on the critical issues and recommendations on towards mitigation and adaptation to environmental changes:

1) Science-based mitigation strategies;

2) Nature-based adaptation measures;

3) Synergies and trade-offs.

Part I: Oct.17th 13:30–15:25			Conference Room 5
Host: Zhiyan Zuo, Jianzhong Xu			
Time	**Reporter**	**Organization**	**Report Title**
13:30-13:50	Tianjun Zhou (Keynote)	Institute of Atmospheric Physics, CAS	Precipitation regime changes in High Mountain Asia driven by cleaner air
13:50-14:10	Wenjie Dong (Keynote)	Sun Yat-Sen University	Strengthening the Global Governance in the Context of Climate Justice
14:10-14:25	Jieming Chou	Beijing Normal University	Impact of Russia–Ukraine conflict on European energy landscape and carbon emission reduction
14:25-14:40	Jiajie Wang	Tohoku University	Sustainable process for CO_2 capture and storageusing industrial by-products assisted by a recyclable ligand
14:40-14:55	Cunde Xiao	Beijing Normal University	Northward transport of dust and pollutants in the Northern Hemisphere: Distance and effects
14:55-15:10	Meihua Zhu	Asia Center for Air Pollution Research	Resilience Assessment of Chinese 31 Regions Based on Public Statistical Data
15:10-15:25	Miao Yu	Chinese Academy of Meteorological Sciences	Is urban greening an effective solution to enhance environmental comfort and improve air quality?
15:25-15:50 Tea Break			
Part II Oct.17th 15:50–17:35			**Conference Room 5**
Host: Guoxing Chen, Xue Qiao			
15:50-16:10	Gang Yan (Keynote)	Chinese Academy of Environmental Planning	Mechanism and Pathway of Coordinated Governance for Pollution Reduction and Carbon Emission Reduction
16:10-16:30	Yongshuo Fu (Keynote)	Beijing Normal University	Vegetation phenology dynamics and its ecohydrological implications
16:30-16:50	Botao Zhou (Keynote)	Nanjing University of Information Science and Technology	Projected changes in compound heat waves and associated population exposure in China
16:50-17:05	Yuqiang Zhang	Shandong University	The co-benefits of medium-long term climate policies under the latest Paris Agreement on global air quality and human health
17:05-17:20	Guoliang Shi	Nankai University	Impacts factors of secondary aerosol and ozone
17:20-17:35	Haixing Gong	Fudan University	Quantifying the Spatial Representativeness of Carbon Flux Footprints of a Grassland Ecosystem in the Semi-arid Region

Part III Oct 18th 08:30–10:10			Conference Room 5
Host: Guoliang Shi, Shanshan Wang			
Time	**Reporter**	**Organization**	**Report Title**
08:30-08:50	Xiaole Pan (Invited)	Institute of Atmospheric Physics, CAS	Shipborne Observations of Atmospheric Black Carbon Aerosol Particles from Antarctic to the Arctic
08:50-09:10	Jinwei Dong (Invited)	Institute of Geographic Sciences and Natural Resources Research, CAS	Synergies and Trade-offs Among Human, Animal, and Environmental Health in the Context of Climate Change
09:10-09:25	Xianda Gong	Westlake University	Quantify aerosol-indirect effects on Arctic climate change
09:25-09:40	Xue Qiao	Sichuan University	Nature-based solutions and designs: cases from the Jiuzhaigou world heritage, Yangtze's headwater, and Sichuan University
09:40-9:55	Yingzhi Zhang	Chengdu University of Technology	Demonstration of Clean Transportation in the Steel Industry in Tangshan City
09:55-10:10	Ning An	Chinese Academy of Meteorological Sciences	Compound hot and ozone extremes in urban China
10:10 –10:30 Tea Break			
Part IV Oct 18th 10:30–11:40			**Conference Room 5**
Host: Xiaole Pan, Jiajie Wang			
10:30-10:50	Fangqun Yu (Keynote)	State University of New York at Albany	Climate intervention through stratospheric aerosol injection: Uncertainties, impacts, and importance of process-level understanding
10:50-11:10	Evgeniya Soldatova (Keynote)	University of Tyumen	Greenhouse gas fluxes from the surface of the overgrowing littoral of Kuchak Lake (Western Siberia)
11:10-11:25	Jianzhong Xu	Northwest Institute of Eco-Environment and Resources, CAS	Impact of anthropogenic aerosol transport on cloud condensation nuclei activity during summertime in Qilian Mountain, in the northern Tibetan Plateau
11:25-11:40	Cong Liu	Fudan University	Health effects of air pollution in the context of climate change
11:40-11:55	Liang Qiao	Fudan University	Soil moisture–atmosphere coupling accelerates global warming
11:55-12:10	Zongren Dai	Fudan University	Prolonged Anaerobic Environment Weakens the Linkage Between Paddy Soil Organic Carbon Sink and Climate Factors

Parallel Sessions

Session VI:
Towards the development of climate-smart and sustainable cities

Time:

Oct.17th 13:30-18:00 & Oct. 18th 08:30-12:00

Chair/Co-Chair:

Alexander Baklanov, World Meteorological Organization

Tao Wang, The Hong Kong Polytechnic University

Convenors:

Jiacan Yuan, Fudan University

Likun Xue, Shandong University

Yanli Zhang, Guangzhou Institute of Geochemistry, CAS

Xu Yue, Nanjing University of Information Science and Technology

Yupeng Wang, Xi'an Jiaotong University

Description:

Focusing on the critical issues and recommendations on towards the development of climate-smart and sustainable cities:

1) Urban simulation and planning

2) Low-carbon urban development

3) Resilient urban systems

Part I Oct.17th 13:30–15:25			Conference Room 7
Host: Tao Wang, Jiacan Yuan			
Time	**Reporter**	**Organization**	**Report Title**
13:30-13:50	Kaicun Wang (Keynote)	Peking University	Visibility-derived aerosol optical depth over global land from 1980 to 2021
13:50-14:10	Ranjeet Sokhi (Keynote)	University of Hertfordshire	Challenges and advances in multiscale analysis of air quality and climate impacts affecting South Asia urban areas
14:10-14:30	Ning Zhang (Keynote)	Nanjing University	Modeling Urban Heat Islands and Thermal Comfort during a Heat Wave Event in East China with CLM5 Incorporating Local Climate Zones
14:30-14:50	Jianzhen Yu (Keynote)	Hong Kong University of Science and Technology	Bayesian Inference-Based Estimation of Hourly Primary and Secondary Organic Carbon at Suburban Hong Kong: Multi-temporal Scale Variations and Evolution Characteristics during $PM_{2.5}$ episodes
14:50-15:10	Yuanjian Yang (Keynote)	Nanjing University of Information Science and Technology	Joint Occurrence of Heatwaves and Ozone Pollution and Increased Health Risks in Beijing, China: Role of Synoptic Weather Pattern and Urbanization
15:10-15:25	Yuquan Zhang	Shanghai Jiao Tong University	Better Accessibility and Air Pollutant Emissions Reduction in the Express Delivery Industry in Shanghai– Synergies or Trade-offs?
15:25-15:50 Tea Break			
Part II Oct.17th 15:50–18:00			**Conference Room 7**
Host: Alexander Baklanov, Yupeng Wang			
15:50-16:10	Shiguang Miao (Keynote)	Institute of Urban Meteorology, China Meteorological Administration	Development of RMAPS model system for integrated urban meteorological services
16:10-16:30	Jian Hang (Keynote)	Sun Yat-Sen University	Some Numerical and Experimental Researches toward Sustainable Urban Climate
16:30-16:45	Chang Cao	Nanjing University of Information Science and Technology	The Local Climatic Effect of Urbanization
16:45-17:00	Xiangyu Ao	Shanghai Typhoon Institute, China Meteorological Administration	Impact of Urbanization on Meteorological Conditions during Landfalling Typhoon Lekima (2019) over the Shanghai Metropolitan Area
17:00-17:15	Lin Pei	Institute of Urban Meteorology, China Meteorological Administration	Convection-permitting simulation over urban areas in China
17:15-17:30	Guangzhao Chen	University of Hong Kong	High Spatiotemporal-resolution Thermal Environment Mapping in a High-density City utilizing Machine Learning
17:30-17:45	Jinlong Chao	Taiyuan Normal University	Analysis of Urban Heat Island Characteristics in Taiyuan under Different Weather Conditions
17:45-18:00	Tengqi Feng	Nanjing University of Information Science and Technology	Effect of Urban Greenspace on Neighborhood Scale Humid-heat Stress – Take Subtropical City Nanjing as an Example

Part III Oct.18th 08:30–10:10			Conference Room 7
Host: Mellouki Abdelwahid, Xu Yue			
Time	**Reporter**	**Organization**	**Report Title**
08:30-08:50	Hashem Akbari (Keynote)	Concordia University	Urban Heat Island Mitigation for the Future Development in Big Cities
08:50-09:10	Jianzhuang Xiao (Keynote)	Tongji University/ Guangxi University	The Sustainability of Concrete Structure and The Design Path of Carbon Reduction
09:10-09:25	Hicham Bahi	Mohammed VI Polytechnic University	Integrated multivariate data analysis for Urban Sustainability Assessment, a case study of Casablanca city
09:25-09:40	Yupeng Wang	Xi'an Jiaotong University	Energy and environment coupled evaluation for sustainable urban development
09:40-09:55	Zhaowu Yu	Fudan University	Nature-based solution for urban heat mitigation: From threshold, network to mechanism
09:55-10:10	Chen Liang	Fudan University	The influence of humid heat on morbidity of megacity Shanghai in China
10:10–10:30 Tea Break			
Part IV Oct.18th 10:30–12:00			**Conference Room 7**
Host: Alexander Baklanov, Tao Wang			
10:30-10:50	Tomas Halenka (Keynote)	Charles University	Cities in changing climate: Interaction with Meteorology, Climate and Air-Quality
10:50-11:10	Xu Tang (Keynote)	ISC/UNDRR IRDR/ICoE	WMO Demonstration and Pilot Study on Integrated Urban Framework on Weather, Climate and Environment Services
11:10-12:00	Discussions		

Parallel Sessions

Session VII:
Collaborative pathways for climate-environment-health governance

Time:

Oct.18th 14:00-17:30

Chair/Co-Chair:

Tong Zhu, Peking University

Ho Kim, Seoul National University

Convenors:

Haidong Kan, Fudan University

Wenjia Cai, Tsinghua University

Lei Huang, Nanjing University

Guofeng Shen, Peking University

Tao Xue, Peking University

Background and Objectives:

Understanding the interconnections between climate change, air pollution, and public health is critical for fostering a holistic and integrated approach to address these pressing global issues. The comprehensive perspective gained from analyzing these interconnections is vital for guiding our efforts toward improving public health and mitigating climate change impacts. This session also aims to maximize policy coherence, promote stakeholder engagement, and enable adaptive governance, all while considering equity and social justice principles.

Major Issues for Discussion:

During this discussion, we will explore key issues related to climate change and environmental health governance, but not limited to:

1. *The Complex Relationship Between Climate Change and Air Pollution: Examining how climate change exacerbates air pollution and vice versa, leading to health risks.*
2. *Health Impacts of Air Pollution: Identifying the specific health risks and vulnerabilities associated with exposure to air pollutants.*
3. *Vulnerable Populations: Recognizing the groups most vulnerable to the adverse effects of air pollution and climate change, considering equity and social justice aspects.*
4. *Strategies for Harmonized Governance: Developing specific strategies to integrate climate change, air pollution, and public health considerations into governance.*
5. *Implementation Challenges: Identifying potential challenges and barriers to effective implementation of coordinated approaches and strategies.*

Part I: Oct.18th 14:00–15:30	Conference Room 1
Moderators: Haidong Kan, Fudan University	
Topic: Understanding the interconnections between climate change, air pollution, and public health; identifying risks and vulnerabilities.	
Panelists	• Lei Huang, Nanjing University • Guofeng Shen, Peking University • Da Chen, Jinan University • Jovine Bachwenkizi, Muhimbili University of Health and Allied Sciences • Xia Meng, Fudan University
15:30-16:00 Tea Break	
Part II: Oct.18th 16:00–17:30	**Conference Room 1**
Moderators: Wenjia Cai, Tsinghua University	
Topic: Analyzing current governance structure, establishing coordinated approaches and specific strategies for harmonized governance, taking into account equity and social justice, as well as addressing implementation challenges	
Panelists	• Ho Kim, Seoul National University, Korea • Gasto Frumence, Muhimbili University of Health and Allied Sciences • Gunter Schumann, Charite University Medicine Berlin/Fudan University • Tao Xue, Peking University • Qi Zhao, Shandong University

Expected Outcomes:

The expected outcomes of this discussion are as follows, but not limited to:

1. *Increased Awareness of Interconnections: Enhanced understanding of how climate change, air pollution, and public health are interrelated.*
2. *Identification of Vulnerabilities: Improved recognition of vulnerable populations and areas at high risk.*
3. *Coordinated Governance Strategies: Formulation of strategies to harmonize governance efforts for more effective policy implementation.*
4. *Equity and Social Justice Integration: Integration of equity and social justice principles into governance structures and strategies.*
5. *Addressing Implementation Challenges: Identification of solutions and approaches to overcome implementation challenges in the context of these interconnections.*

Parallel Sessions

Session VIII:
Coordinative pathways for climate-environment-carbon neutrality governance

Time:

Oct.18th 14:00-17:30

Chair/Co-Chair:

Kebin He,Tsinghua University

Bert Fabian, EANET Secretariat, UNEP

Convenors:

Weiqiang Chen, Institute of Urban Environment, CAS

Rong Wang, Fudan University

Zhaowu Yu, Fudan University

Zhongde Dai, Sichuan University

Wendong Wei, Shanghai Jiao Tong University

Background and Objectives:

Coordinated analysis in climate-environment-carbon neutrality governance is crucial as it fosters an integrated approach, maximizes policy coherence, promotes stakeholder engagement, and enables adaptive governance. This approach ensures a comprehensive understanding of these interconnected issues, balancing environmental, economic, and social considerations to pursue effective climate action and achieve carbon neutrality.

An integrated governance approach allows for the maximization of synergies, as many strategies like renewable energy adoption, material efficiency improvements, and ecological and environmental governance can offer benefits across climate and carbon dimensions. It also facilitates stakeholder engagement and promotes adaptive governance, which are critical for driving societal change and designing flexible policies that can adapt to new information and changing conditions. This comprehensive perspective is crucial in guiding our efforts towards a sustainable future.

Major issues for discussion

The major issues for enhance global partnership to be addressed, but not limited to:

1.The Impact of Climate Change and the Necessity of Coordinated Action

2.Mitigation Strategies for Reducing Greenhouse Gas Emissions

3.Technological Innovations and Deployment for Achieving Carbon Neutrality

4.International Cooperation and Public Participation

Part I: Oct.18th 14:00–15:30	Conference Room 2
Moderators: Xi Lu, Tsinghua University	
Topic: Synergy between environmental governance and carbon neutrality	
Panelists	• Franz Gatzweiler, United Nations University Institute in Macau • Hancheng Dai, Peking University • Zhongde Dai, Sichuan University • Kangkang Tong, Shanghai Jiao Tong University • Rong Wang, Fudan University • Zhaowu Yu, Fudan University • Yi Yang, Chongqing University • Wendong Wei, Shanghai Jiao Tong University
15:30-16:00 Tea Break	
Part II: Oct.18th 16:00–17:30	**Conference Room 2**
Moderators: Wei-Qiang Chen, Institute of Urban Environment, CAS	
Topic: Joint efforts in advancing material metabolism	
Panelists	• Ayman Elshkaki, Institute of Geographic Sciences and Natural Resources Research, CAS • Zhi Cao, Nankai University • Beijia Huang, University of Shanghai for Science and Technology • Jiashuo Li, Shandong University • Yutao Wang, Fudan University • Fengming Xi, Shenyang Institute of Applied Ecology, CAS • Yadong Yu, East China University of Science and Technology • Chao Zhang, Tongji University

Expected Outcomes:

The expected outcomes of the roundtable discussion (Session 8) are those recommendations as, but not limited to

1.Recognizing the synergy between environmental governance strategies and achievement of carbon neutrality goals,

2.Identifying the coupling between energy consumption, material metabolism and the achievement of carbon neutrality goals,

3.Developing effective carbon emission reduction strategies and their potential, promoting innovation and research, and facilitating public awareness and education

Parallel Sessions

Session IX:
Global partnerships and cooperation with stakeholders in the interdisciplinary areas

Time:

Oct.18th 14:00-17:30

Chairs:

Qunli Han, Integrated Research on Disaster Risk (IRDR)

Xu Tang, EHAN/JEU/UNOCHA/UNEP

IFRC Representative

Conveners:

Hongliang Zhang, Fudan University

Fang Lian, International Programme Office for Integrated Research on Disaster Risk

Jue Liu, Peking University

Xiaoling Zhang, The University of Hong Kong

Wei Wan, Asia Clean Air Center

Kai Meng, Elsevier Press

Background and Objectives:

Climate change is one of the greatest threats to mankind in the 21st century. The increased risks associated with climate change are manifested by the increase of weather/climate extremes, spread of infectious diseases, accelerated biodiversity losses and decline of environmental quality. Integrated Research on Disaster Risk (IRDR) has recognized the urgent need to address the profound impacts of climate change and called for the global efforts of cooperation to improve the governance on climate change, weather/climate extremes, atmospheric environment and public health.

The overall objective of this session is to provide a platform to share the innovations, insights, knowledge and experiences. The participants will identify the challenges and opportunities for the intersectoral, and interdisciplinary collaboration and practice required. The session will contribute to the Priority 1 "Understand risk creation and perpetuation in the present risk landscape" and Priority 9 "Foster interdisciplinary and multi-stakeholder collaboration" identified in the A Framework for Global Science in support of Risk Informed Sustainable Development and Planetary Health (ISC-UNDRR-IRDR, 2021, hereafter as "Research Framework") . The output of this session will be a concrete contribution to the follow-up actions for the Sendai Midterm Review and IPCC AR 6, the implementation of the Research Framework and the inputs toward IRDR 2024 Conference.

Expected Outcomes:

The expected outcomes of the roundtable discussion (Session 9) are those recommendations as, but not limited to

(1)Increased understanding of risks and their interconnections,
(2)Identifying, and prioritizing critical risks and best practices to address them,
(3)Fostering partnerships between stakeholders,
(4)Developing effective governance mechanisms,
(5)Promoting innovation and research, and
(6)Facilitating public awareness and education.

Part I: Oct.18th 14:00–15:30 — **Conference Room 3**

Moderators: Qunli Han, Integrated Research on Disaster Risk
Jue Liu, Peking University

Topic: Understanding and mitigating the impacts of climate change

Panelists	• Yuming Guo (Online), Monash University • Yue Qin, Peking University • Shiro Hatakeyama, Asian Center for Air Pollution Research • Maheswar Rupakheti, Research Institute for Sustainability- Helmholtz Centre Potsdam • IFRC Representative

15:30-16:00 Tea Break

Part II: Part II: Oct.18th 16:00–17:30 — **Conference Room 3**

Moderators: Xiaoling Zhang, University of Hong Kong
Fang Lian, IRDR–IPO

Topic: Roles of Global partnerships to address these complex and interconnected issues

Panelists	• Xiaoling Zhang, University of Hong Kong (Global target but local actions: synergistic climate action across the production-consumption system) • Rachel Martin (Online), Elsevier • Tao Hu, Lakestone Institute for Sustainable Development • Gang He (Online), City University of New York • Wei Wan, Clean Air Asia • Xu Tang, EHAN/JEU/UNOCHA/UNEP

☆ *Major issues for discussion*

The major issues for enhance global partnership to be addressed, but not limited to:

(1) The need for understanding the impacts of climate change on public health, including the spread of diseases, mental health impacts, and food and water security.
(2) The need for early warning systems and disaster risk reduction measures to mitigate the impacts of weather and climate-related hazards.
(3) The role of businesses and the private sector in addressing climate change and reducing their carbon footprint.
(4) The importance of investing in renewable energy and energy efficiency to reduce greenhouse gas emissions.
(5) The need for international cooperation and partnerships to address these complex and interconnected issues.

Side Meeting

The Acid Deposition Monitoring Network in East Asia (EANET)

National Stakeholder Awareness Workshop in P.R. China on
EANET: Promoting acid deposition and air quality management in East Asia
18 October 2023, Fudan University, Shanghai, P.R. China

Time:

Oct.18th 09:30-11:30

Location:

Room: Shanghai Hall

Background and Objectives:

The Acid Deposition Monitoring Network in East Asia (EANET) was established in 2001 as an intergovernmental initiative to create a common understanding on the state of acid deposition problems in East Asia, provide useful inputs for decision making at various levels, and promote cooperation among countries. China is one of the 13 EANET Participating Countries (PCs). In 2021, the PCs, decided to expand its scope to cover air pollution and adopt a Supplementary Document (Annex) to the Instrument.

EANET's activities are guided by five-year Medium Term Plans and a Work Programme and Budget approved by the Participating Countries every year. For 2023, the Secretariat will organize National Stakeholder Awareness Workshops to support the implementation of activities of the EANET, and to better understand specific country needs. The workshop will be held on 18 October 2023 in Shanghai, P.R. China. The workshop is co-organized by the the EANET and the Fudan University. Participants of the workshop will be government officials, academicians, non-government organizations and private sectors.

This workshop aims to showcase the achievements and activities of the EANET over the last 20 years including activities involving P.R. China and to encourage more cooperation with EANET and P.R. China in the implementation of the expanded scope and the EANET Project Fund activities.

Format:

The workshop is planned to be hybrid where presenters from EANET Participating countries can present online and the Secretariat and Network Center and stakeholders in P.R. China can meet in-person.

Tentative Programme Agenda:

Time		Moderated by EANET Secretariat
9:30-9:40	Registration	
9:40-9:50	Opening Remarks	Ministry of Ecology and Environment, P.R. China Network Center of the EANET
9:50-10:00	Objectives of the Workshop	Bert Fabian, Coordinator, EANET Secretariat
10:00-10:20	EANET – 20 years of activities and impact	Network Center of the EANET
10:20-10:40	Status and challenges in acid deposition monitoring and air quality monitoring in China	China National Environmental Monitoring Center (National Center of the EANET)
10:40-11:00	Air Quality Improvement and Sci.&Tech. Development in China during the Last Decade	China Research Academy of Environmental Sciences
11:00-11:20	Discussion	Facilitated discussion moderated by EANET Secretariat
11:20-11:30	Summary and Closing Remarks	Bert Fabian, Coordinator, EANET Secretariat

Session X: Poster session

Time:

Oct. 18th 12:00-18:00

Chair/Co-Chair:

Yijun Zhang, Fudan University

Liwu Zhang, Fudan University

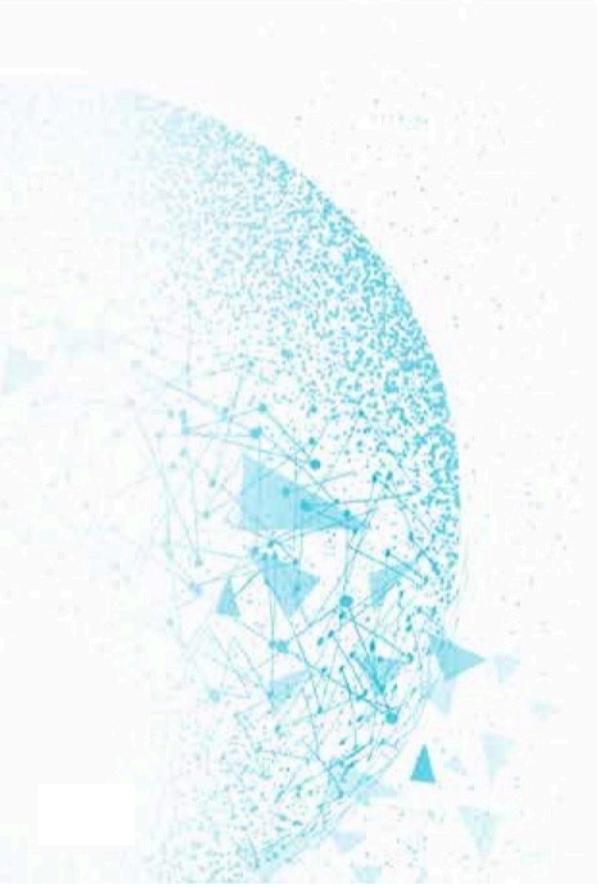
Convenors:

Xiaoyan Wang, MAP-AQ Asian Regional Office

Huiling Ouyang, Fudan IRDR International Centre of Excellence

Dan Li, Fudan University

Lei Yao, Fudan University



Number	Author	Institute	Title
P01	Xiaodong Jiang	China University of Geosciences, Wuhan	Characteristics of Daytime-and-Nighttime AOD Difference over China: A Perspective from CALIOP Satellite Observations and GEOS-Chem Model Simulations
P02	Muhammad Zeeshaan Shahid	University of the Punjab, Lahore Pakistan	Long-Term Variability of Aerosol Concentratio-ns and Optical Properties over South Asia
P03	Jian Zhang	Chinese Academy of Meteorological Sciences	Regional biocrust retrieval and its impacts on dust emission
P04	Jianyan Lu	Chinese Academy of Meteorological Sciences	Assessment of the impacts of cloud chemistry on surface SO_2 and sulfate levels in typical regions of China
P05	Hao Fan	IUSE	An interactive deep learning tool to explore air quality response to local emission changes at street level
P06	Lingaona Zhu	Fudan University	To what extent can the Ozone Valley over the Tibetan Plateau influence the East Asian summer precipitation?
P07	Ahmad Mahdavi	University of Tehran	Huge Methane Gas Cloud Over Tehran, Iran
P08	Manuj Sharma	Indian Institute of Technology, Tirupati	Development of air pollutants emission inventory of urban anthropogenic sources in the non-attainment city of India: A case study of Vijayawada city, India
P09	Qianjie Chen	Hong Kong Polytechnic University	Sulfate production from hypohalous acids in the marine boundary layer
P10	Yiqun Wang	Guangzhou Institute of Geochemistry, CAS	Production of Volatile Organic Compounds by Ozone Oxidation Chemistry at the South China Sea Surface Microlayer
P11	Huifan Deng	Guangzhou Institute of Geochemistry, CAS	Daytime SO_2 chemistry on ubiquitous urban surfaces as a source of organic sulfur compounds in ambient air
P12	Jinli Xu	Guangzhou Institute of Geochemistry, CAS	Heterogeneous chemistry of ozone with floor cleaning agent: Implications of secondary VOCs in the indoor environment
P13	Lei Kong	Institute of Atmospheric Physics, CAS	Unbalanced emission reductions of different species and sectors in China during COVID-19 lockdown derived by multi-species surface observation assimilation
P14	Pan Li	University of Chinese Academy of Sciences	Inorganic ions enhance the number of product compounds through heterogeneous processing of gaseous NO_2 on aqueous layer of acetos-yringone
P15	Dipesh Rupakheti	Nanjing University of Information Science and Technology	Aerosol loading and types over an urban (Dushanbe, Tajikistan) and a background (Issyk Kul, Kyrgyzstan) site in Central Asia

Number	Author	Institute	Title
P16	Yuying Wang	Nanjing University of Information Science & Technology	The impacts of dust storms with different transport pathways on aerosol chemical compositions and optical hygroscopicity of fine particles in the Yangtze River Delta
P17	Hao Wu	Tsinghua University	Vertical spatiotemporal characteristics of new particle formation and ultrafine particle evolution at Shenzhen Tower
P18	Tian Zhang	Fudan university	Classification and estimation of unfavourable boundary-layer meteorological conditions in Beijing for PM2.5 concentration changes using vertical meteorological profiles.
P19	Tong Wu	Civil Aviation Flight University of China	Lidar-based remote sensing of the vertical profile of aerosol liquid water content using a machine-learning model
P20	Miaomiao Zhang	Fudan University	Molecular Characterization of Atmospheric Organic Aerosol in the typical Megacities of China
P21	Jianbing Jin	Nanjing University of Information Science and Technology	Decadal atmospheric ammonia emission inversion in China through assimilating IASI ammonia retrievals
P22	Zhe Song	Zhejiang University	Significant reductions of urban daytime ozone by extremely high concentration NOx from ship's emissions: A case study
P23	Xiaoai Jin	Zhejiang A&F University	Significant contribution of organics to aerosol liquid water content in winter in Beijing, China
P24	Zhen Song	Fudan University	Roles of regional transport and vertical mixing in aerosol pollution in Shanghai over the COVID-19 lockdown period observed above urban canopy
P25	Shuhui Xue	Fudan University	Source apportionment of organic aerosol in Shanghai using an extractive electrospray ionization time-of-flight mass spectrometer (EESI-TOF-MS)
P26	Mengqi Cheng	Fudan University	The decadal abrupt change of global terrestrial atmospheric aridity
P27	Chuang Li	Fudan University	Detection and Potential Formation Pathways of Chlorinated Organic Compounds in Suburban Shanghai
P28	Chen Yang	Institute of Urban Environment, CAS	Molecular composition of anthropogenic oxygenated organic molecules and their contribution to organic aerosol in a coastal city
P29	Kaiwen Ma	Fudan University	Direct Effects of Air Humidity on Dust Aerosol Production: Evidences for the Surprising Role of Electrostatic Forces
P30	Xinyuan Wu	Fudan University	Seasonal discrepancies and inter-relationship of peroxyacetyl nitrate (PAN), ozone, and other environmental factors in Hangzhou, East China
P31	Tao Wang	Fudan University	Title of poster: Key factors determining the formation of sulfate aerosols through multiphase chemistry

Number	Author	Institute	Title
P32	Yin Wei	Institute of Urban Meteorology, CMA, Beijing	Research on $PM_{2.5}$ and PM10 Forecast in China with the Application of the WRFDA-Chem Three-dimensional Variational System
P33	Wenlu Wu	Southern University of Science and Technology	Responses of regional surface ozone to temperature-dependent evaporative anthropogenic VOC emissions: a case study in Northern China
P34	Qiyuan Wang	Institute of Earth Environment, CAS	High-time-resolution chemical composition and source apportionment of $PM_{2.5}$ in northern Chinese cities: implications for policy
P35	Jiajia Mo	Southern University of Science and Technology	Evaluating the performance of WRF-GC v2.0 in simulating summertime surface ozone concentrations over China
P36	Rong Hu	Beijing Normal University	Aerosol hygroscopicity enhancement in the twilight zone revealed from Raman LiDAR and HTDMA measurements
P37	Huikui Liu	Institute of Earth Environment, CAS	The impact of atmospheric motions on source-specific black carbon and the induced direct radiative effects over a river-valley region
P38	Runqi Zhang	Fudan University	Application of versatile aerosol concentration enrichment system and online ion chromatography technology in $PM_{2.5}$
P39	Fangyuan Cheng	Fudan University	Distinct evolution of summer surface air temperature change signal over North China
P40	Meiyu Chang	Fudan University	Land–atmosphere feedbacks weaken the risks of precipitation extremes over Australia in a warming climate
P41	Jiaxin Dong	Fudan University	Sectoral source apportionment of $PM_{2.5}$ and O_3 in Tangshan
P42	Hongru Bi	Lanzhou University	The Circum-global Transport of Massive African Dust and its Impacts on the Regional Circulation in Remote Atmosphere
P43	Qianqian Gao	Fudan University	High Enrichment of Heavy Metals in Fine Particulate Matter through Dust Aerosol Generation
P44	Chunfeng Tian	Fudan University	The Impact of Urban Expansion on China's Meteorology and Pollution from 1990 to 2020
P45	Aifang Gao	Hebei University of Geosciences	Regional joint $PM_{2.5}$-O_3 control policy benefits further air quality improvement and human health protection in Beijing-Tianjin-Hebei and its surrounding areas
P46	Dongze Xu	Tsinghua University	The change of Southern Hemisphere extratropical cyclone precipitation characteristics in SSP5-8.5 scenario in CMIP6 models
P47	Zhenchen Liu	Fudan University	Glo3DHydroClimEventSet(v1.0): A global event set of hydroclimatic extremes with three-dimensional evolutions and metrics (1951-2022)

Number	Author	Institute	Title
P48	Qiao Liu	Peking University	The impact of natural flood disasters on livelihoods and its association with new cases and deaths of infectious diseases in 168 countries and territories from 1990 to 2019: a worldwide observational study
P49	Shikang Du	Lanzhou University	Data-Driven Approaches for Air Pollution Forecasting: A Window Based Multi-Output GBRT Approach
P50	Mengya Wang	Nanjing University of Information Science and Technology	A new approach for health-oriented ozone control strategy: adjoint-based optimization of NOx emission reductions using metaheuristic algorithms
P51	Wenwen Sun	Shanghai University of Medicine & Health Sciences	Formation mechanism of atmospheric $PM_{2.5}$ explosive growth events in Shanghai based on vertical structure
P52	Jiayan Du	Fudan University	The dominant mechanism of the explosive growth of summer surface O3 concentrations in Beijing-Tianjin-Hebei region, China
P53	Zeyu Yang	Beijing Normal University	Reconstructing two-decade (2000-2021) of daily 1-km-resolution surface O_3 concentrations from space in China
P54	Qi Ran	Sun Yat-Sen University	Potential health and economic impacts of shifting manufacturing among Asian countries
P55	Feng Zhang	Fudan University	Cloud identification and properties retrieval of the Fengyun-4A satellite using a ResUnet model
P56	Ning An	Chinese Academy of Meteorological Sciences	Compound hot and ozone extremes in urban China
P57	Cuiping Liu	Fudan University	Deriving overlapped cloud motion vectors based on geostationary satellite and its application on monitoring Typhoon Mulan
P58	Bin Guo	Fudan University	Cloud Classification by machine learning for Geostationary Radiation Imager
P59	Zhijun Zhao	Fudan University	Transfer-learning-based approach to retrieve cloud properties using geostationary satellite measurements
P60	Wenwen Li	Fudan University	Physics-driven machine learning algorithm facilitates multilayer cloud property retrievals from geostationary passive imager measurements
P61	Jun Li	Shanghai Qizhi Institute	Parameterization of optical properties for liquid cloud droplets containing black carbon based on neural network
P62	Yue Cai	Shanghai Qizhi Institute	Optimized Alternate Mapping Correlated K-Distribution Method for Atmospheric Radiative Transfer
P63	Jiaming Wang	Nanjing University	Comprehensive Evaluation Framework for Intervention on Health Effects of Ambient Temperature (CEFI-HEAT)

Number	Author	Institute	Title
P64	Shanya Yang	Fudan University	Constraining Microplastic Particle Emission Flux from the Ocean.
P65	Hao Zhang	Nanjing University	Health threat of $PM_{2.5}$-bound trace elements exposure on asthma hospital admission: A time-stratified case-crossover study
P66	Siyang He	Fudan University	Contributions of urbanization to a miga-heatwave in the Yangtze River Delta Metropolitan
P67	Weidong Zhang	Nanjing University of Information Science and Technology	Study on Bidirectional Reflectance Distribution Function of Urban Neighborhood based on Unmanned Aerial Vehicle
P68	Zhiruo Lu	Nanjing University of Information Science and Technology	Calibration Scheme for Low-Cost CO_2 Concentration Sensor Based on Machine Learning for Urban High-Density Network Observation
P69	Jun Wang	Nanjing University of Information Science and Technology	Simulation of atmospheric CO_2 and CH4 concentration with high spatial resolution in urban area
P70	Chenguang Tian	Nanjing University of Information Science and Technology	Projections of fire emissions and the consequent impacts on air quality under 1.5 °C and 2 °C global warming
P71	Kaiwen Zhang	Fudan University	Constrained emergence of air temperature change signal in northern-central India from background variations
P72	Xinghua Jiang	Fudan University	Submicron drops from flapping bursting bubbles
P73	Ruoyu Zhang	Fudan University	Extremely Inexpensive and Simple Method To Remove Indoor Respiratory Aerosols
P74	Yangyang Liu	Fudan University	Unrecognized fast atmospheric sulfate production driven by interfacial strong electric field of aerosol particles
P75	Xiang Zhang	Fudan University	Culturable and Inhalable Airborne Bacteria in a Semiunderground Municipal Wastewater Treatment Plant in Shanghai: Distribution, Transmission, and Health Risk Assessment
P76	Ning Zhang	Nanjing University of Information Science and Technology	Composition characteristics and source analysis of PM during high pollution period in New Delhi
P77	Bin Luo	Shandong University	Spatial-Temporal contributions of anthropogenic and biomass burnings on air quality changes in India from 1995 to 2014
P78	Jingjing Wang	Fudan University	Laser heterodyne radiometers (LHR) for in situ ground-based remote sensing of greenhouse gases in the atmospheric column
P79	Shujun Bie	Fudan University	Shipping originated carbonaceous aerosol emissions, mixing state and potential climate effects
P80	Chenji Jin	Fudan University	Air pollution of $PM_{2.5}$ and O_3 driven by synoptic and circulation pattern in a Coastal megacity

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