First Circular and Call for Papers
Eighth WMO International Workshop on Monsoons (IWM-8)
17-21 March 2025, Pune, India

"Advancing the Understanding & Prediction of Monsoons and their Impacts in a Changing Climate"

The International Workshop on Monsoons (IWM) is a major quadrennial workshops series under the World Weather Research Programme (WWRP) of the World Meteorological Organization (WMO). IWM-8, the eighth workshop in this series, is being organized at **Pune, India,** jointly by the Indian Institute of Tropical Meteorology (IITM), Pune, Ministry of Earth Sciences (MoES), Government of India, the WWRP's Working Group on Tropical Meteorology Research (WGTMR) and the WCRP's CLIVAR/GEWEX Monsoons Panel in cooperation with the India Meteorological Department and the International Monsoons Project Office (IMPO). ***The workshop will be held at IITM Pune during* 17-21 March 2025 in *hybrid mode, permitting on-site and virtual participation*.** The IWM provides a forum for researchers, forecasters, and stakeholders/end-users to discuss recent advances in monsoons research and current topics including new observational studies, process studies, and strategic priority setting for modelling/prediction studies, covering weather-to-climate time scales. The emphasis is on addressing monsoon impacts as part of the societal challenges prioritized by the WWRP and WCRP: high-impact weather, water, agriculture, energy, disaster risk reduction, urbanization, and new technologies, in heavily populated monsoon regions around the world. Outcomes from the workshop are expected to facilitate transfer of new science and technology to National Meteorological and Hydrological Services (NMHSs) in these regions.

An important feature of the workshop is a series of invited perspective talks on key monsoon topics of current interest. The workshop will also place high importance on poster presentations as a great opportunity to support in-depth presentation of the study, results, and achievements. The workshop proceedings will be published as a special collection in a reputed journal following the peer review.

Goal of the Workshop

The goal of the IWM-8 is to discuss recent developments in understanding, modeling, and predicting monsoons, new technologies and tools used for prediction of extreme rainfall events, field experiments and the application of monsoon prediction tools to derive societal benefits. The prediction aspects will cover all spatial and temporal scales, from weather and sub-seasonal to seasonal and decadal, as well as monsoon projections and weather

extremes in a changing climate, and research on climate intervention relevant to monsoon regions. Participants from operational, research, climate services, and end-user communities are welcome.

In addition to the invited keynote talks, the IWM-8 will include contributed oral and poster presentations on the themes indicated below.

Workshop Themes

1. **Regional Monsoons of the World and their Multi-scale Processes**

   Multi-scale weather and climate processes influence a wide variety of phenomena in the monsoon regions, including seasonal-to-decadal monsoon variabilities, active and break monsoon spells on sub-seasonal time-scales, monsoon synoptic systems (e.g., low pressure systems and depressions), severe and high-impact weather, among others. Improved understanding of these processes is essential to better represent them in weather and climate models. The topics to be covered in this theme focus on the key underlying physical processes across different scales, such as land-ocean-atmosphere interactions, remote teleconnections, large-scale organized convection, mesoscale convective systems, and cloud-aerosol interactions, that shape variations in the regional monsoons of the world.

2. **Field Experiments and Multi-platform Measurements of Precipitation over Monsoon regions**

   Integrated observations of precipitation and heavy rainfall-producing weather systems in monsoon regions are important for better understanding of the underlying physical mechanisms and evaluating weather-and-climate models. The topics to be covered in this theme mainly include: results from recent field campaigns and satellite measurements of precipitation over monsoon regions; description of plans for upcoming deployments as well as proposals for coordinated international activities (such as MONEX-2029); evaluation of monsoon simulations utilizing newly available observational datasets from field campaigns and space-borne instruments; status of multi-platform precipitation data sets over global monsoon regions, gap areas and possible solutions.

3. **Simulation and Prediction of Monsoons, including Extremes**

   There are major uncertainties in simulating and predicting regional monsoon processes and extremes such as persistent heavy precipitation and draughts. Topics to be covered in this theme mainly include: predictability of regional monsoon processes, precipitation extremes, and sub-seasonal to decadal timescale variability; large-ensemble simulations to better understand forced and internal monsoons'

variabilities; analysis of regional monsoon processes using global storm-resolving simulations; improving the monsoon simulation/prediction through development of advanced data assimilation and better model physical schemes, including application of AI techniques.

4. **Monsoons in a Changing Climate**

As the Earth's climate continues to warm, there have been changes in atmospheric circulation and weather phenomena worldwide including the monsoon regions, which are at least partially attributed to anthropogenic global warming. There are large uncertainties, however, in future projections of regional monsoons by state-of-the-art climate models. The topics to be covered in this theme include: changes in regional monsoon characteristics (such as length of monsoon season, timing of onset and retreat of monsoons; occurrence frequency, intensity, phase and distribution of precipitation); reasons for such monsoon changes, e.g., impacts of anthropogenic emissions of greenhouse gases and aerosols, and also land use/land type changes; strategies for reducing uncertainties in the future projections of regional monsoons; weather modification research and climate intervention research relevant to global and regional monsoons .

5. **Research to Operations and Operations to Services transitions and Communication**

The topics in this theme will focus on transforming monsoon research to operations and societal services; application of climate prediction and projections in various sectors (such as agriculture, energy, and water); quantification and communication of uncertainties associated with monsoon prediction and projection; use of AI/ML for preparing sector specific predictions and projections; assessing the socioeconomic impacts of monsoons; developing climate change adaptation strategies in monsoon regions.

Registration of Participants

The prospective participants need to register through the IWM-8 website. The registration fee for participation will be as below:

On-site Participation

Type of Participant	Registration Fee (In USD)	What does registration include for onsite attendance?
Standard	300	

Low and Lower-Middle Income Countries **	150	• Admission to all oral and poster sessions and to the exhibition area • Coffee breaks • Lunches • Workshop dinner • Workshop bag • Virtual access (access from any device to the program, sessions, poster gallery, shared experience between in-person and remote attendees, etc..)
Early Career Researcher (ECR)*	100	

Virtual Participation

Type of Participant	Registration Fee (In USD)	What does registration include for virtual attendance?
Standard	100	Virtual access (access from any device to the program, webinar sessions, poster gallery, shared experience between in-person and remote attendees, etc..)
Low and Lower-Middle Income Countries **	0	
Early Career Researcher (ECR)*	0	

** Early career researchers (ECRs) are master and PhD students, researchers, and practitioners within 7 years of highest obtained degree (excluding parental and care leave). Practitioners are those working at the interface of society, policy, practice, and research.*

*** Low and lower-middle income countries of where you work or study, to see the list click **here**.*

- *On-site participation in IWM-8 is restricted to registered participants only. Priority will be given to participants selected for oral/poster presentations and participants selected to receive financial support to attend the event.*

How to submit abstract

Interested participants are invited to submit an abstract of their proposed paper (oral as well as poster) by **30th September 2024**. The abstract (of 200 to 300 words) should be submitted after registering at **https://wmo-iwm8.tropmet.res.in/login.** The abstracts should include the name(s) of author(s), affiliation(s), mailing address and email address and

phone number of the corresponding author. The theme (one of the above five themes) to which the abstract pertains should also be clearly mentioned.

Important Dates

Abstract Submission Starts on: ***25 July 2024***

Abstract Submission Closes on: ***30 September 2024***

Confirmation of Acceptance of Abstract: ***31 October 2024***

Payment of Registration Fee Starts on: ***01 November 2024***

VISA request Closes on: ***30 November 2024***

Payment of Registration Fee Closes on: ***15 February 2025***

International Organising Group (IOG)

1. Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences (MoES), Chair
2. Dr. M. Mohapatra, DGM, IMD, New Delhi
3. Prof. Yali Luo, NUIST, Nanjing, China
4. Dr. R. Krishnan, Director, IITM, Pune, India
5. Dr. Chris Davis (Chair, SSC, WWRP) NSF NCAR, USA
6. Dr. Kunio Yoneyama (Member of SSC, WWRP), JAMSTEC, Japan
7. Prof. Zhuo Wang (Co-chair, WWRP/WGTMR), University of Illinois at Urbana-Champaign, USA
8. Dr. Nico Caltabiano, WWRP Secretariat, Geneva
9. Dr. Hindumathi Palanisamy, WCRP Secretariat, Geneva
10. Dr. E.N. Rajagopal, Executive Head (IMPO), IITM, Pune, India

International Scientific Committee (ISC)

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2. Dr. R. Krishnan, Director, IITM Pune, India – Co-chair
3. Dr. Chris Davis (Chair, SSC, WWRP) NSF NCAR, USA
4. Dr. Kunio Yoneyama (Member of SSC, WWRP), JAMSTEC, Japan
5. Prof. Xubin Zeng (Co-chair, GEWEX SSG & GPEX), University of Arizona, USA
6. Prof. Zhuo Wang (Co-chair, WWRP/WGTMR), University of Illinois at Urbana-Champaign, USA
7. Prof. Paola A. Arias (Co-Chair, GEWEX/GHP) – University of Antioquia, Colombia

8. Prof. Leila Carvalho (Co-chair, MP & Member of American Monsoons WG) University of California at Santa Barbara (UCSB), USA
9. Dr. Suryachandra Rao Anguluri (MP Co-chair & Member of Asian-Australian Monsoons WG) – IITM, Pune, India
10. Dr. Annalisa Cherchi (MP Member) – National Research Council, Institute of the Atmospheric Science and Climate (CNR-ISAC), Italy
11. Dr. Samson Hagos (MP member), Pacific Northwest National Laboratory, USA
12. Dr. Rondrotiana Barimalala (MP Member & Co-chair, African Monsoons WG), Norwegian Research Center, Bergen, Norway
13. Dr. Akintomide Akinsanola, (Co-chair, African Monsoons WG), University of Illinois Chicago/Argonne National Laboratory, USA
14. Dr. Neil Hart (Member African Monsoons WG), University of Oxford, UK
15. Dr. Masilin Gudoshava (Member, African Monsoons WG), IGAD Climate Prediction and Applications Centre (ICPAC), Kenya
16. Dr. Tieh-Yong Koh (Co-chair, Asian-Australian Monsoons WG), Asia Pacific Institute of Experts, Singapore
17. Dr. Shiromani Jayawardena (Member, Asian-Australian Monsoons WG), Sri Lanka
18. Prof. Alice Grimm (Co-chair, American Monsoons WG), Universidade Federal do Paraná, Brazil
19. Dr. Caio Augusto dos Santos Coelho (Member, American Monsoons WG), Instituto Nacional de Pesquisas Espaciais (INPE), Brazil
20. Prof. Andrew Turner, University of Reading, UK
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22. Prof. Michelle Simões Reboita, (Member of WGTMR and American Monsoons WG), Universidade Federal de Itajubá, Brazil
23. Dr. Michelle Santee (Co-lead, ACAM), Jet Propellant Laboratory, USA
24. Dr. Ritesh Gautam (Co-Lead, ACAM), Environmental Defense Fund, USA
25. Prof. Mat Collins (CLIVAR SSG Member), University of Exeter, UK
26. Prof. Zhou Tianjun, IAP, Chinese Academy of Sciences, Beijing, China
27. Prof. Tandong Yao (Member, CliC SSG), Member, Chinese Academy of Sciences (CAS), Beijing, China
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29. Dr. Satyaban Bishoyi Ratna (MP member), IMD, Pune, India
30. Dr. E.N. Rajagopal, Executive Head (IMPO), IITM, Pune – Convener

National Organising Committee (NOC)

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3. Dr. R. Krishnan, Director, IITM Pune

4. Dr. V.S Prasad, Head, NCMRWF, Noida, India
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Workshop Organisers