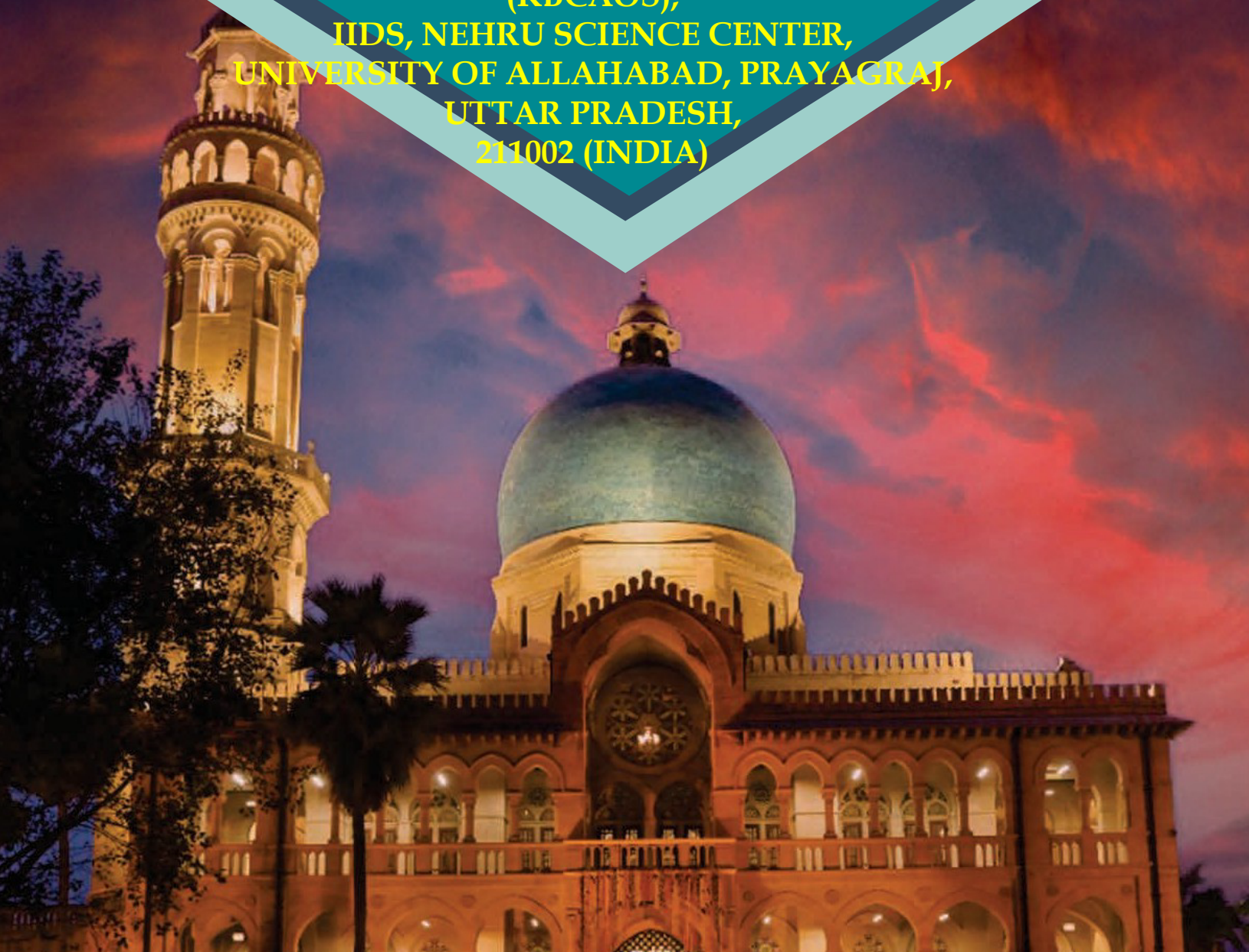# National Conference
on
Extreme Weather and Climate Events in a Global Warming Scenario
10 September, 2025

Organized By

K. BANERJEE CENTER OF ATMOSPHERIC AND OCEAN STUDIES (KBCAOS), IIDS, NEHRU SCIENCE CENTER, UNIVERSITY OF ALLAHABAD, PRAYAGRAJ, UTTAR PRADESH, 211002 (INDIA)

Patron

Prof. Sangita Srivastava

Hon'ble Vice Chancellor, University of Allahabad, Prayagraj

Organizing Committee

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Convener

Dr. Vivek Kumar Pandey

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Dr. Sudhir Kumar Singh

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The University of Allahabad is a central university located in the city of Prayagraj, Uttar Pradesh, India. It was established on September 23, 1887 through an act of parliament and has since achieved the status of being an Institute of National Importance. The university boasts a rich legacy of renowned scholars, scientists, writers and artists who have contributed to the institution's thriving academic and cultural endeavors. More details about the University, its vision and mission, academic and research programmes as well as facilities may be found in www.allduniv.ac.in.

Prayagraj, formerly Allahabad, is a holy city of India. Prayagraj is located in eastern Uttar Pradesh in the northern region of India. The city is a primary center for culture, religion and education. The confluence of Ganga, Yamuna and mythical Saraswati rivers defines this city. Many national and regional headquarters of administration, military and research facilities are located in Prayagraj. The city has a rich cultural heritage. It is famous for holding Maha Kumbh every 12 years and Kumbh every 6 years which attracts tourists and pilgrims from all over the world. Anand Bhawan, Company Garden and Khusro Bagh are other tourist attractions. Prayagraj is on the list of Smart cities of India. The city has 4 railway stations and an airport.

The K. Banerjee Centre of Atmospheric and Ocean Studies (KBCAOS) is a research and academic center dedicated to research and teaching in the fields of Meteorology and Climate Modeling. The KBCAOS was established on 10 September 2000 with the financial support of National Centre for Polar and Ocean Research (NCPOR), Goa in the form of collaborative research projects on Ocean Modelling. Subsequently, based on the performance of the Centre, the University Grant Commission sanctioned 7 faculty positions to the Centre. KBCAOS faculty members have completed government-funded projects and actively collaborate with national and international institutions on Ocean and Atmosphere modeling related research. The collaborators include the International Centre for Theoretical Physics (Italy), COLA (USA), Lamont Doherty Earth Observatory (USA), John Hopkins University (USA), IITM Pune, NCMRWF Noida, and IMD Delhi. At present the Centre is running M.Tech. programme in Earth System Sciences and a PhD program in Atmospheric and Ocean Sciences. The Centre has participated in scientific expeditions to the Southern Ocean/Antarctica. It is recognized by the UGC as a center with potential for research excellence, and has received DST-FIST scheme funding. The Centre is currently running the DST sanctioned project Varahmihir Centre of Excellence in Climate Change. Many students of the Centre are employed in prestigious institutions all over the world. The KBCAOS has advanced computing facilities with high-performance servers and workstations for modeling related research and teaching. The KBCAOS is a leading Indian academic center focused on

cutting edge research and training in atmospheric and ocean sciences, and climate change through academic programs, funded projects, and national and international collaborations.

In a warming world, extreme weather and climate events are becoming more frequent and intense. These events, including heat waves, droughts, wildfires, floods, and stronger storms, are exacerbated by human-caused climate change. As the planet warms, the atmosphere holds more moisture, leading to heavier rainfall and more intense cyclones. Rising temperatures also contribute to longer and more severe droughts, and increased wildfire risks due to drier conditions.

Here's a more detailed look at how these events is impacted:

● **Heatwaves:**
    Temperatures are rising, and the frequency and intensity of heatwaves are increasing. These events can lead to heatstroke, dehydration, and other health problems, particularly for vulnerable populations.

● **Droughts:**
    Warmer temperatures increase evaporation, leading to drier conditions and longer, more severe droughts. This can impact agriculture, water resources, and increase the risk of wildfires.

● **Wildfires:**
    Dry conditions created by droughts and heatwaves, combined with increased vegetation, can lead to more frequent and intense wildfires. These fires can cause significant damage to ecosystems, infrastructure, and human health.

● **Flooding:**
    A warmer atmosphere holds more moisture, which can lead to heavier rainfall and more intense storms. Rising sea levels also contribute to higher storm surges, increasing the risk of coastal flooding.

● **Stronger Storms:**
Warmer ocean temperatures can fuel stronger hurricanes and cyclones, with higher wind speeds and heavier rainfall.

● **Compound Events:**
    Multiple extreme events happening at the same time or in close succession (e.g., heatwave and drought, or storm surge and heavy rainfall) can have a compounding effect, making them even more devastating.

The scientific consensus is that human activities, particularly the burning of fossil fuels, are the primary driver of these changes. The Intergovernmental Panel on Climate Change (IPCC) has concluded that human-caused climate change has already increased the frequency and intensity of many extreme weather and climate events, according to the IPCC Sixth Assessment Report. Continued warming will likely lead to even more extreme events in the future, with significant consequences for human societies and the environment.

This national conference will serve as a common platform for knowledge exchange, networking, and professional development, with objectives including disseminating research, fostering collaboration, and to enhancing the skills. The conference aim to provide attendees a valuable insight about increased frequency and intensity, scientific research, modeling and prediction, mitigation strategies such as reducing greenhouse gas emission, policy development, adaptation and resilience such as building climate resilience, developing infrastructure, community engagement, facilitate connections, and contribute to the advancement of an Extreme Weather and Climate Events in a Global Warming Scenario.

There shall be both oral and poster presentations of contributed research papers besides Invited Talks in the fields of

o Changing Dynamics of Extreme Weather Events
o Impacts of Extreme Weather
o Application of Artificial Intelligence and Machine Learning (AI/ML) to address climate change challenges, and monitoring, predicting, and mitigating its impacts
o Environmental pollution and Green House Gas effects
o Biogeochemical factors affection climate
o Biological Productivity of the Ocean and effect of Climate Change on it
o Mitigation and Adaptation Strategies

o Climate Finance and Technology

- ❖ **No TA/DA will be provided to the participants**.
- ❖ **No registration fees is required.**
- ❖ Conference participation/presentation certificate will be provided.
- ❖ Accommodation will not be provided to the participants. Please make your own ar**rangement.**
- ❖ Initial date for abstract submission: 0**2 September 2025**
- ❖ Last date for submission of abstract: 0**8 September 2025**
- ❖ Notification about acceptance of abstract: 0**8 September 2025**
- ❖ For any difficulty in online registration please contact: Dr. Sudhir Kumar Singh, Mob.: **+91-9793414696**, Email: **sudhirinjnu@gmail.com**

REGTRATION LINK:

https://docs.google.com/forms/d/e/1FAIpQLSctTbcN36C8Y5f4AR7EGV_VGQHVgRBR68 WL1sWyY2UobJfygg/viewform?usp=dialog

Please scan this QR code for Registration