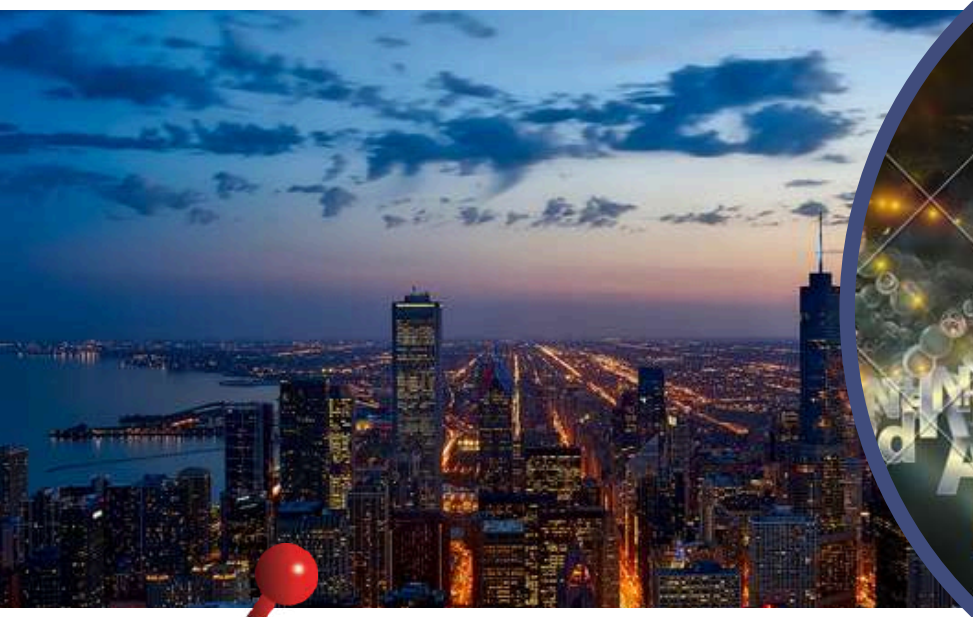
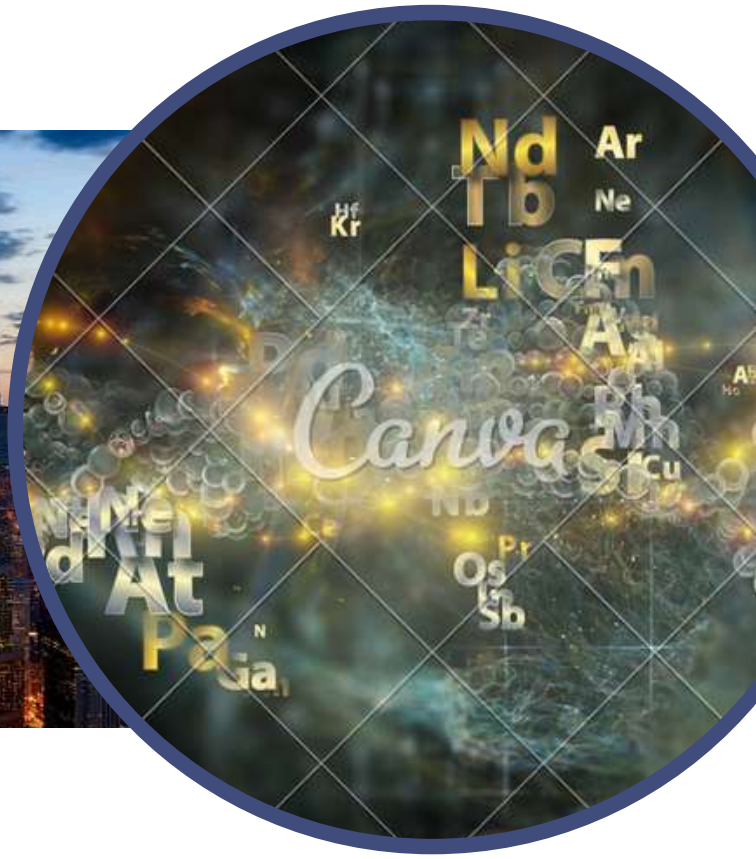
Brainstorming Workshop on Atmospheric

CHEMISTRY AND CLIMATE CHANGE (C^3) interactions

2027





22-23 January, 2027

CORAL, IIT Kharagpur

BRIDGING CHEMISTRY, CLIMATE, AND OBSERVATIONS TOWARDS A SUSTAINABLE WORLD

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The Centre for Ocean, River, Atmosphere and Land Sciences (CORAL) at Indian Institute of Technology, Kharagpur was established in March 2005 for imparting quality teaching and advanced training in Earth System Science and Technology. The Centre offers a two-year Postgraduate Program i.e. Master of Technology (M. Tech.) in Earth System Science and Technology/MS/PhD programmes. The M. Tech in Earth System Science and Technology by CORAL coincides with the establishment of Ministry of Earth Sciences (MoES) by the Government of India. The Centre is involved in frontier research in atmospheric and oceanic sciences.

About the Indian Institute of Technology Kharagpur

Established in 1951, the Indian Institute of Technology Kharagpur (IIT KGP) is the first and one of the most prestigious IITs in India. Recognized as an Institute of National Importance, IIT Kharagpur has been a pioneer in science, engineering, technology, management, and social sciences education and research.

Spanning a lush 2,100-acre campus, it hosts a vibrant academic community fostering innovation, interdisciplinary research, and global collaboration. The Institute is home to world-class laboratories, research centers, and facilities that drive cutting-edge advancements in fields ranging from sustainable energy and climate science to artificial intelligence and space technology.

Guided by its motto "Yogaḥ Karmasu Kauśalam" (Excellence in Action is Yoga), IIT Kharagpur continues to shape the nation's scientific and technological landscape through education, research, and innovation aimed at solving real-world challenges and contributing to a sustainable future.

ATMOSPHERIC CHEMISTRY AND CLIMATE INTERACTIONS

A Journey of Innovation and Success

OVERVIEW

The atmosphere is a dynamic chemical reactor where chemical composition and climate are critically intertwined. What we release into the air alters our climate, and a changing climate in turn alters the air's chemistry. This conference explores this essential two-way relationship that shapes our planet's future.

CHALLENGES

The primary challenge is understanding the complexity and scale of these interactions, from fast chemical reactions to long-term climate change. Quantifying unpredictable feedback loops and the uncertain effects of atmospheric aerosols on temperature and clouds are major hurdles. Bridging these vast differences in time and space within our models remains a significant scientific difficulty.

OBJECTIVES

QUANTIFY INTERACTIONS

To accurately measure and understand the complex processes that link atmospheric composition with climate system.

IMPROVE PREDICTIVE MODELS

To develop and refine sophisticated chemistry-climate models for more reliable projections of future air quality and climate scenarios.

INFORM EFFECTIVE POLICY

To provide the robust scientific foundation needed for evidence-based policies that protect our climate and the air we breathe.

SOLUTIONS

Solutions lie in a multi-pronged approach that combines advanced instrumentation on satellites and on the ground with powerful, integrated chemistry-climate models. These tools allow us to simulate complex feedback loops with increasing accuracy. Targeted laboratory and field studies are also crucial for isolating and understanding key chemical and physical processes.

Understanding the link between atmospheric chemistry and climate is fundamental to safeguarding human health and building a sustainable future. Fostering interdisciplinary collaboration is the key to untangling these complex interactions and developing effective strategies to protect our planet for generations to come.

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Centre for Ocean, River, Atmosphere and Land Sciences (CORAL)
Indian Institute of Technology Kharagpur,
Kharagpur, West Bengal, India

INDIA Brainstorming workshop on Atmospheric Chemistry and Climate Interactions

C^3-2026

January 22–23, 2027

CORAL, IIT Kharagpur

Theme

Bridging Chemistry, Climate, and Observations toward a Sustainable Atmosphere

Scope of Topics

- **Air Pollution and Impacts:** Linking pollution to health, crops, and climate.
- **Aerosol Chemistry:** Unraveling aerosol - chemistry interactions.
- **Stratospheric Chemistry:** Tracking ozone and water vapour.
- **Mesospheric Chemistry:** Probing chemical reactions in the upper atmosphere.
- **Instrumentation & Retrievals**: Measuring Earth's changing atmospheric composition.
- **Chemistry–Climate Modelling:** Simulating air quality–climate feedbacks

Important Dates

Abstract Submission Deadline	Notification of Acceptance	Early Bird Registration Deadline	Conference Dates
October 30, 2026	**November 15, 2026**	**November 30, 2026**	**January 22–23, 2027**

Submission Link
emaill abstract to:
atmos.iitkgp@gmail.com

More Information
www.atmoslabiitkgp.com