

**REGISTRATION FORM**

61<sup>st</sup> ANNUAL CONVENTION of IGU on Advances in Earth System Sciences with special reference to weather and climate at Banaras Hindu University (BHU), Varanasi during 3-5, December 2024. Please submit a filled-in (Capital Letters) registration form in the following format

- Name: (Prof/Dr/ Mr/Mrs/Ms)
  - Age:
  - Designation(Post):
  - Affiliation:
  - Address for Correspondence:
  - Mobile No:
  - Email ID:
  - Title of Abstract (if submitted):
  - Preference of Presentation (please tick)    [.....] Oral                    [.....] Poster
  - Please tick suitable topic only  
 [.....] Advances in Earth System Sciences with special reference to weather and climate  
 [.....] Solid Earth Geosciences  
 [.....] Marine Geosciences  
 [.....] Atmosphere, Space & Planetary Sciences  
 [.....] Young Researchers Program
  - Are you a Member of IGU? Yes [ ] No [ ]
- Place: \_\_\_\_\_  
 Date: \_\_\_\_\_ Signature \_\_\_\_\_

**ACCOMMODATION**

The participants will be accommodated mostly in the Govt. guest houses or city hotels on a payment basis. Delegates are requested to send their accommodation requirements in advance to the local organising convener (igubhu2024@gmail.com) with a copy to igu123@gmail.com by 15th November 2024.

**INDIAN GEOPHYSICAL UNION (IGU) EXECUTIVE COUNCIL FOR THE YEAR 2024-2027**

Position	Members
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<b>Hon. Secretary</b>	<b>Dr. Abhey Ram Bansal</b> , CSIR-NGRI, Hyderabad
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**Prof Harsh Gupta**, President, Geological Society of India, Bangalore  
**Dr.M. Ravichandran**, Secretary, MoES, New Delhi  
**Prof Abhay Karandikar**, Secretary, DST, New Delhi  
**Dr Akhilesh Gupta**, Former Secretary, SERB-DST, New Delhi  
**Dr Anita Gupta**, Advisor, DST, New Delhi  
**Prof. V.P. Dimri**, INSA Honorary Scientist, CSIR-NGRI, Hyderabad  
**Mrs. Sushma Rawat**, Director (Exploration), ONGC, New Delhi  
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**Dr. M Mohapatra**, DGM, India Meteorological Department, New Delhi  
**Dr. R Krishnan**, Director, IITM, Pune  
**Dr. V S Prashad**, Head, NCMRWF, Pune  
**Prof. S N Tripathi**, IIT Kanpur, Kanpur

**LOCAL ORGANIZING COMMITTEE**

- Chairman:**  
**Prof S K Jain**, Vice Chancellor, Banaras Hindu University (BHU)
- Co-Chairman:**  
**Prof A S Raghbanshi**, Director, IESD, BHU
- Prof G P Singh**, Head, Department of Geophysics, BHU
- Convenor:**  
**Prof. R K Mall**, IESD, BHU

**SCIENTIFIC MEMBERS**

- ♦ Prof R Bhatla
- ♦ Prof A D Singh
- ♦ Prof Uma Shankar
- ♦ Prof M K Srivastava
- ♦ Prof R S Singh
- ♦ Dr Sandeep
- ♦ Dr Raghav Singh
- ♦ Dr S P Maurya
- ♦ Dr Birendra Pratap
- ♦ Dr S Ojha
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- ♦ Dr B Mandal
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- ♦ Dr R P Singh
- ♦ Dr V Prasad
- ♦ Dr K Ram
- ♦ Dr S Srivastava

Corresponding email: igubhu2024@gmail.com  
 Contact:



**INDIAN GEOPHYSICAL UNION**  
**61<sup>st</sup> Annual Convention**

**on**  
**Advances in Earth System Sciences with special reference to weather and climate**



**3-5 December 2024**

**Organized Jointly by**  
**Indian Geophysical Union (IGU), Hyderabad**  
**and**  
**Department of Environment and Sustainable Development**



**Department of Geophysics**  
**Banaras Hindu University, Varanasi**

## OBJECTIVES

The Earth system sciences, particularly weather and climate research, have significantly advanced in recent years. These advances encompass various technological developments, new methodologies and better scientific understanding which in turn helped to improve our ability to predict, understand, and respond to weather and climate phenomena. Recently, high-resolution weather and climate models have been developed to understand the small-scale phenomena regarding cloud formation and precipitation patterns, which were previously challenging to capture accurately. Integration of different Earth system components that include the atmosphere, oceans, ice, land surface, and biosphere allows for more comprehensive simulations of climate interactions and feedback mechanisms, improving long-term climate projections. For improved weather forecasting, numerical weather prediction techniques have been used by incorporating vast amounts of observational data from satellites, radars, and ground stations to provide detailed short-term and medium-term forecasts. Further, the machine learning algorithms and Artificial Intelligence tools help in processing these complex datasets and help to improve the accuracy of weather forecasts.

Satellite and remote sensing technologies like geostationary satellites and polar-orbiting satellites will also help monitor and predict severe weather events like hurricanes and thunderstorms worldwide. Lots of research into the past climate conditions using ice cores, tree rings, and sediment records also help scientists understand natural climate variability and the influence of human activities on the climate system. Studies are growing with specific focus on understanding the drivers and impacts of extreme weather events, such as heat waves, droughts, and floods, in the context of climate change. This research aids in the development of better risk assessment and management strategies. Interdisciplinary research and collaboration programs are useful to evaluate the potential impacts of climate change and the effectiveness of mitigation and adaptation strategies by sharing of knowledge from climate science, economics, and social sciences for sustainable development.

The technological innovations, enhanced computational capabilities, and interdisciplinary collaboration have immensely helped in weather and climate research. Continued investment in research, technology, and international cooperation will be crucial in addressing the complex issues posed by the climate change.

Along with the main theme, several topics related to the Evolution of the Indian crust, Earthquake Processes, Geohydrology, Mineral Resources and Fuels, Marine geosciences etc., will be deliberated during the three-day Annual Convention of the Indian Geophysical Union (IGU) to be held at the Department of Environment and Sustainable Development and Department of Geophysics at Banaras Hindu University during 3-5 December 2024. The Annual Convention will also address various issues for promoting and developing geosciences in global and regional aspects.

## About Varanasi

Varanasi, one of the world's oldest living cities, also known as Banaras or Benaras, is situated in the southeastern part of Uttar Pradesh in northern India. Nestled on the left bank of the sacred river Ganga (Ganges), its ancient name "Kashi" signifies it as the "site of spiritual luminance". Varanasi holds profound spiritual significance, being the place where Buddha is believed to have delivered his first sermon in nearby Sarnath in 528 BCE. Renowned as a hub of learning, Varanasi is celebrated for its rich heritage in music, literature, art, and craft. The tranquil waters of the Ganges, the ethereal boat rides at sunrise, the ancient Ghats lining the riverbanks, the myriad temples, and the winding alleys create an enchanting atmosphere steeped in mysticism and devotion, unique to the city of Lord Shiva. Varanasi is also home to one of India's largest universities, the prestigious Banaras Hindu University, adding to the city's cultural and educational vibrancy.

## About Banaras Hindu University (www.bhu.ac.in)

Banaras Hindu University (BHU), established in 1916 by the renowned nationalist leader Pandit Madan Mohan Malviya with the support of notable figures like Dr. Annie Besant, is a prestigious institution located in Varanasi. Envisioned as the "University of India," BHU was founded under the Parliamentary legislation - B.H.U. Act 1915. It played a significant role in the Indian independence movement and has grown into a prominent center of learning in India, producing numerous freedom fighters and nation-builders. The university has significantly contributed to national progress through its distinguished scholars, artists, scientists, and technologists. The main campus of BHU spans 1,300 acres, featuring well-maintained roads, lush greenery, a temple, an airstrip, and architecturally impressive buildings. The campus airfield, initiated for military training during World War II, adds to its historical significance. Additionally, a 2,700-acre secondary campus is being developed in Barkachha, Mirzapur district. BHU comprises six institutes, 14 faculties, 144 departments, four interdisciplinary centers, a women's college, and three constituent schools, covering a broad spectrum of disciplines, including humanities, social sciences, technology, medicine, science, fine arts, and performing arts. The university hosts six centers of advanced studies, ten departments under the Special Assistance Programme, and numerous specialized research centers. Four degree colleges in Varanasi are affiliated with BHU. Bharat Kala Bhavan, the university's renowned museum, houses rare collections of cultural artifacts. The university's 927-bed hospital is equipped with modern amenities, and BHU offers extensive sports and recreational facilities, including large playgrounds, an auditorium, a flying club, and various auxiliary services such as a printing press, publication cell, fruit preservation center, subsidized canteens, and an employment and information bureau. The BHU community comprises about 15,000 students from diverse backgrounds, approximately 1,700 faculty members, and nearly 8,000 non-teaching staff. Students from countries across the globe, including the USA, Europe, Asia, the Middle East, and Africa, come to study at BHU. The university continues to foster new ideas, global integration, and the cultivation of intellect and culture, making it a microcosm of the world.

## ABOUT INDIAN GEOPHYSICAL UNION

Circulating a letter signed by fifteen leading geophysicists of the country in the year 1963 formed the Indian Geophysical Union. The response to this was encouraging and about sixty geophysicists responded to this

invitation. These geophysicists who enrolled themselves as Members of the Union were styled as Foundation Fellows.

The Indian Geophysical Union was formally inaugurated by Prof. Humayun Kabir, the then Minister for Cultural Affairs and Scientific Research in the year 1963, at a pleasant function organized in the Geology Department, Osmania University. Dr. D.S. Reddy, the then Vice-Chancellor, Osmania University, presided over the function, Dr. S. Bhagavantam, the then Scientific Adviser to Defence Minister welcomed the guests. Dr. K.R. Ramanathan, first President of the Union, delivered the Presidential address. Dr. M.S. Krishnan explained the aims and objectives of the Union and presented the draft constitution, which was revised in 1964.

Dr. K.R. Ramanathan, Director, Physical Research Laboratory, Ahmedabad and a past President of the International Union of Geodesy and Geophysics, was unanimously elected as President of the Union. The first Executive Council was also formed with Dr. K.R. Ramanathan, Dr. M.S. Krishnan, Dr. S. Bhagavantam, Dr. P.K. Bhattacharya, Sri L.N. Kailasam, Dr. Hari Narain, Sri M.B. Ramachandra Rao, and Dr. B.S.R. Rao and Dr. S. Balakrishna. The Union thus blessed by eminent geophysicists of India has made good impetus with the active encouragement given by the Vice-Chancellor of the Osmania University, Dr. D.S. Reddy and P.V.G. Raju the then Minister for Education, Government of Andhra Pradesh.

The Union adopted its constitution framed by a Sub-Committee consisting of Dr. M.S. Krishnan, Dr. K.R. Ramanathan and Dr. S. Balakrishna and the Union was registered on 11<sup>th</sup> March 1964.

## THE AIMS AND OBJECTIVES OF THE UNION :

- To bring together all geophysicists active in various disciplines such as seismology, magnetism, meteorology, geodesy, volcanology, oceanography, hydrology and tectonophysics and to provide them with opportunities for meeting and discussing current problems of geophysics of solid earth and the oceans.
- To encourage the study of and research in geophysical problems and to provide media for publication of the results.
- To organize and arrange for the meetings and conferences of the Union and encourage the publication and dissemination of knowledge of geophysics and of important researches in various branches of geophysics.
- To cooperate with similar learned societies in organizing and taking part in meetings, symposia, research projects, etc, and to represent geophysics both in the national and international sphere.
- To secure and administer funds, grants and endowments for the furtherance of and research in geophysics.
- To undertake and execute all other acts which shall assist and promote the usefulness, aims and purposes of the Union.

## IGU AWARDS

- IGU-ONGC Best Poster Awards**  
**ONGC-IGU cash prizes** will be awarded to two students and two research scholars below 30 years (as of 1<sup>st</sup> January 2024) for pursuing quality research in the field of Geosciences.
- IGU-Prof. Jagdeo Singh & Dr. S. Balakrishna Memorial Grant**  
Meritorious students of Geophysics/Applied Geophysics will be provided the second sleeper class fare, local hospitality, accommodation, and registration fee waiver to participate in the IGU Annual Convention. Names of the first and second-rank holders of the pre-final examination (PG) are to be forwarded to IGU by the Heads of the Departments of Geophysics/Applied Geophysics of recognized universities.
- IGU-Anni Talwani Memorial Grant for Women Researcher**  
Indian women researchers/students around 28 years (as of 1<sup>st</sup> January 2024) are encouraged to participate in the Annual Convention through this grant. The selection of grantees will be based on the merit of a full paper submitted to the Annual Convention by the applicant, certified by the Head of the Department/Organization. The 3<sup>rd</sup> AC class fare, accommodation, and registration fee waiver will be provided to four grantees.

## ABSTRACT VOLUME

The 61<sup>st</sup> Annual Convention of IGU will bring out a volume containing abstracts, messages from luminaries, geoscientific work of eminent scientists/researchers, and advertisements from Sponsors (Institutes, Industries, and Instrument Manufacturers, etc.). The tariffs for publication of Advertisements are listed below:

<b>Back Cover (Color)</b>	<b>: ₹ 75,000/-</b>	<b>Front Cover (Color)</b>	<b>: ₹ 70,000/- Inside</b>
<b>Back Cover (Color)</b>	<b>: ₹ 60,000/- Inside</b>	<b>Inside Full Page (Color)</b>	<b>: ₹ 50,000/-</b>
<b>Inside Full Page (BW)</b>	<b>: ₹ 30,000/-</b>		

Those interested in publishing their products/details of their organizations need to send the necessary information to igu123@gmail.com by 1<sup>st</sup> October 2024. The tariff has to be paid in favour of Treasurer, Indian Geophysical Union, payable at Hyderabad.

## BANK DETAILS:

<b>Account Name</b>	<b>:</b>	Indian Geophysical Union
<b>Bank name</b>	<b>:</b>	State Bank of India
<b>Branch</b>	<b>:</b>	SBI, Habsiguda, Hyderabad
<b>Account No</b>	<b>:</b>	52191021424
<b>Account Type</b>	<b>:</b>	Saving Account
<b>IFSC Code</b>	<b>:</b>	SBIN0020087

## CALL FOR ABSTRACTS:

Format of Abstract: 1<sup>st</sup> Line: Title; 2<sup>nd</sup> Line: Author/Authors Affiliation; 3<sup>rd</sup> Line: Presenting Author email ID and Abstract of about 300 words should be submitted online (www.iguonline.in) by 15<sup>th</sup> October, 2024. The author(s) should indicate his/her/their preference for oral or poster presentation. However, the technical committee shall decide the Final Scientific Program, as abstracts will be accepted based on merit and contents. Acceptance will be communicated to the potential speakers by 30<sup>th</sup> October 2024.

The theme of the 61<sup>st</sup> IGU Annual Convention is "**Advances in Earth System Sciences with special reference to weather and climate** "

## MAIN THEME

- ❖ Remote Sensing and Satellite Technology
- ❖ Weather and Climate Modeling and Simulation
- ❖ Understanding Extreme Events
- ❖ Cryosphere Research
- ❖ Ocean-Atmosphere Interactions
- ❖ Climate change and its Impacts, Mitigation, Adaptation

## SOLID EARTH GEOSCIENCES

- ❖ Geohazards and Risk Assessment
- ❖ Plate Tectonics and Crustal Dynamics
- ❖ Geodesy
- ❖ Sedimentology and Stratigraphy
- ❖ Exploring the internal structure of the Earth
- ❖ Structural Geology
- ❖ Geothermal energy and tectonic activity
- ❖ Gravitational and magnetic fields to Infer subsurface structures and processes
- ❖ Mineral Properties and Rock Formation
- ❖ Geochronology and Isotope Geochemistry

## MARINE GEOSCIENCES

- ❖ Coastal Geomorphology
- ❖ Marine Geohazards
- ❖ Marine Resources
- ❖ Ocean Basin Evolution
- ❖ Marine Sedimentology
- ❖ Seafloor Mapping and Plate Tectonics
- ❖ Subsurface structure of the ocean crust and mantle.

## ATMOSPHERIC, PLANETARY & SPACE SCIENCES

- ❖ Air Pollution, Ozone Layer
- ❖ Radiation, Cloud Microphysics
- ❖ Atmospheric Dynamics
- ❖ Investigations of Geological features and processes on planetary surfaces and Planetary Interiors
- ❖ Planetary Formation and Evolution
- ❖ Solar Activity and Space weather
- ❖ Magnetosphere Dynamics
- ❖ Space Exploration and Technology

In addition to the above, a half-day session will be devoted to "**Young Researcher Program**" by those who are pursuing quality research for Ph.D. in Earth Sciences, certified by their supervisor. The "Best Oral Presenter Award" will be announced by a jury.

## REGISTRATION FEE:

IGU Non Member Delegate	:	<b>INR 6000/-</b>
IGU Member Delegate	:	<b>INR 5000/-</b>
IGU Non Member Delegate (Senior Citizen):	:	<b>INR 4000/-</b>
IGU Member Delegate (Senior Citizen)	:	<b>INR 3000/-</b>
Research Scholars	:	<b>INR 3000/-</b>
Students	:	<b>INR 1500/-</b>
IGU student Members	:	<b>INR 1000/-</b>
Spouse / Accompanying Person	:	<b>INR 2000/-</b>

All delegates must register to participate in this 61<sup>st</sup> Annual Convention of IGU. The enclosed/attached Registration Form (also available at www.iguonline.in) may be filled in and sent by email igubhu2024@gmail.com copy to igu123@gmail.com) to Dr. Abhey Ram Bansal, Hon. Secretary, IGU, CSIR-NGRI Campus, Uppal Road, Hyderabad-500007, Ph:040-27012810. A soft copy of the abstract volume will be provided by the IGU. However, the registration form is mandatory to attend the conference. One form for one delegate.