CALL FOR PAPERS

Registered participants are requested to submit an extended abstract (template in Word) through EasyChair (https://aachnbgu.aaccrs.org/#abstract) or to aachnbgu2018@gmail.com by Sep 1, 2022. Participants are requested to write "Abstract for AAC - 2022, «Participant ID»" (the Participant ID will be assigned during registration through E-mail) in the subject line while sending the extended abstracts by E-mail. It is proposed to bring out proceedings of the Conference. Acceptance notification will be communicated to authors by Oct 1, 2022, with a request to submit the soft copy of the final abstract in camera-ready form by Oct 10, 2022. AAC-2022 will endeavor to give preference to papers that deal with new advancements, applications and developments in the aforesaid areas. All papers submitted for presentation in the Conference must be original and should not have been presented elsewhere. All papers will be subjected to review and decisions will be conveyed to the authors accordingly. Selected conference papers will be published in International/National Journals. *Procedure to publish the research papers will be communicated later (http://aachnbgu.aaccrs.org/).

Accommodation:

There are many hotels (including budget hotels) and lodges are available at Srinagar Garhwal. Please visit for accommodation (https://aachnbgu.aaccrs.org/#accommodation). Apart from this, the AAC-2022 organising committee will also arrange shared accommodation at the Garhwal Mondal Vikas Nigam and University Guest House against a minimum payment on a first come first serve basis. Interested delegates may send their request to: aachnbgu2018@gmail.com

FIELD TRIP

A two-day visit to Shri Badrinath Ji Temple after the conference may be planned to display the different geographical features on the route. Badrinath (altitude 3133 m) is 200 kms from Srinagar and it takes around 8 hrs. by bus to reach there. Those who are interested in field trip are requested to indicate it on the registration form clearly and send an additional fee of 2000.00 per person towards the field trip (this includes transport, lodging and boarding cost) . Interested delegates may send their request to: aachnbgu2018@gmail.com

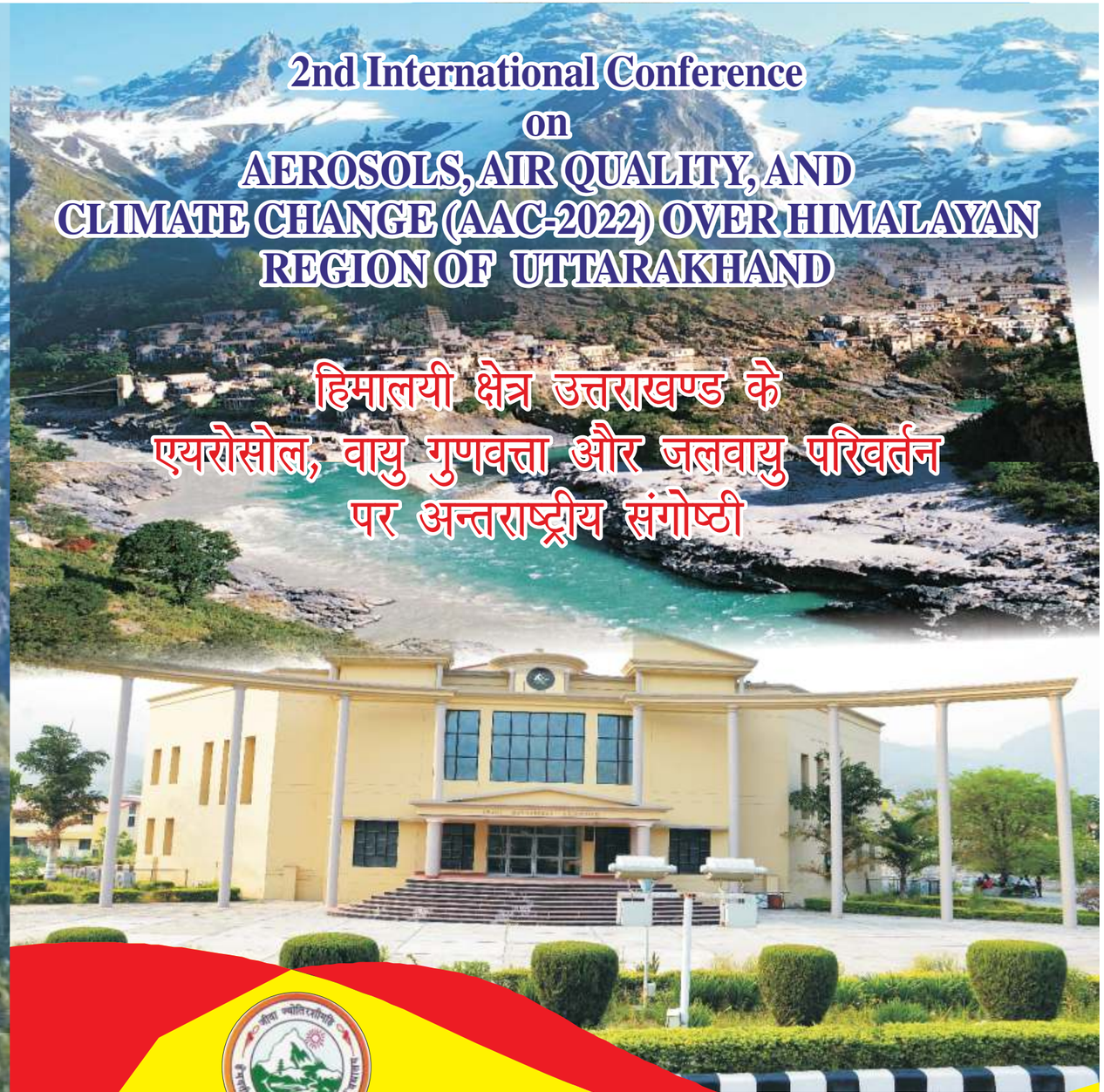
IMPORTANT DATES	
Abstract submission deadline	Sep 1, 2022
Abstract acceptance notification	Oct 1, 2022
Registration deadline	Oct 09, 2022
Conference dates	Oct 15-17, 2022

REGISTRATION FEES

The following Conference registration fees* is payable by different categories of delegates:
Indian Delegates: Rs. 3500
Students: Rs. 2000
Foreign Delegates: USD 250
*Procedure to pay the registration fee will be communicated later on website (https://aachnbgu.aaccrs.org/#registration)

2nd International Conference on AEROSOLS, AIR QUALITY, AND CLIMATE CHANGE (AAC-2022) OVER HIMALAYAN REGION OF UTTARAKHAND

हिमालयी क्षेत्र उत्तराखण्ड के एयरोसोल, वायु गुणवत्ता और जलवायु परिवर्तन पर अन्तराष्ट्रीय संगोष्ठी



Organised by
Department of Physics and Internal Quality Assurance Cell (IQAC)
HNB Garhwal University
(A Central University)
Srinagar Garhwal, Uttarakhand

15-17 October, 2022

Patron Vice Chancellor,
HNB GARHWAL UNIVERSITY SRINAGAR (GARHWAL)

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Atmospheric aerosols are the solid and liquid particles suspended in the air. Most of these aerosol particles are produced by natural (wind-borne dust, sea spray, volcanic debris, biogenic aerosols) as well as anthropogenic (industrial emission, agricultural activities, fossil fuel combustion, waste and biomass burning) sources. Aerosols have a significant impact on regional to global climate and contribute to the change in air quality, cloud formation mechanism, atmospheric chemistry, greenhouse effect, and the Earth's radiation budget. Aerosols can also affect human health by causing chronic respiratory diseases and asthma. During the last few decades, the anthropogenic emission of aerosols have been increased significantly due to vehicular emission, urbanization and industrialization. Several national and international studies have reported the increased amount of air pollution over the Indo Gangetic Plain (IGP) regions and Brahmaputra valley regions of India. During winters, the whole northern part of India is facing heavy smog every year. It is caused by various factors including stubble burning, industrialization and vehicular emission in nearby regions and states. Recently, according to a World Health Organization survey, the air quality of Delhi is the worst of any major city in the world.
Transportation of the atmospheric pollutants over the high-altitude locations of the Himalayas with air masses from the southwest direction was also reported during the pre-monsoon and winter seasons. Which reaches all the way up to Nepal and Tibet through the valley regions. Affects the weather and climate conditions over the sensitive regions of the Himalaya. Apart from these increasing tourism activities, urbanization and events of forest fire majorly contribute as the local emission sources of aerosols in Uttarakhand.
In view of the above challenges, the Hemvati Nandan Bahuguna Garhwal University (HNBGU) Srinagar-Pauri Garhwal, Uttarakhand is going to organize an International conference on "Aerosols, Air Quality, and Climate Change (AAC-2022) on Himalayan Region of Uttarakhand" in the Department of Physics, School of Science, HNBGU, Srinagar (Garhwal), India in collaboration with IITM Pune on 15-17 October 2022 for mitigating it through after interaction and adoption new techniques.
The main objectives of the conference the above-mentioned conference are:

- Discussion on the categorization of possible aerosol sources, their characteristics and their impact on the weather and climatic conditions.
- Discussion on the possible new active monitoring techniques, and innovative use of existing instrumentation to study new or established issues in aerosol science.
- Development of a regulatory framework to study atmospheric aerosols and its climatic impact over the Himalayan region with the collaboration of different institutes and agencies gathered in the conference.
- Discussion on the possible approach to develop the legislation and policy for air pollution control and mitigation with the involvement of government and responsible authorities.

In this conference, the total participant will be more than 500 including thirty from HNBGU, Srinagar and around fifty from National research organizations and universities (IITs, IISER, IITM, PRL, NPL, IMD, Bose Institute, JNU, BHU, and Indian Universities).

THE UNIVERSITY

Established under the U.P. State Universities Act (1973), then named as Garhwal University was founded in December 1973. It was rechristened in 1989 as Hemvati Nandan Bahuguna Garhwal University.
Today this University is amongst the ten largest University of the country with 3 campuses and more than 180 affiliating colleges and institutes (both state run and self-financed). Since its inception, despite the limited resources and various geographical constraints, the University has charted a course of growth and development, to gain recognition as one of the better universities in India. As a mark of appreciation for its academic achievements, HNB Garhwal University was upgraded as a Central University under the Central Universities Act, 2009.The University is located at Srinagar (105 kms from Rishikesh) on the banks of river Alaknanda, one of the major tributaries of river Ganga. The serene environment presents a near perfect setting for intellectual pursuits.

DEPARTMENT OF PHYSICS

Physics department was established in the year 1962 as one of the Science departments of Birla Government Degree College, Srinagar (Garhwal). This was upgraded to Post Graduate level in the year 1972. The department in Pauri and Tehri Campus was established in 1972 and 1973 respectively with an undergraduate course in Physics. In 1992 post-graduate course was started with specialization in electronics at Pauri campus whereas it was started at Tehri campus in 1990. University took over the Department of Physics as Centre for under graduate, Post graduate teaching and research activities in Physics. Research in Solid state Physics, Mathematical Physics and Spectroscopy began with the establishment of Garhwal University. The Department has been identified under DST-FIST programme for strengthening the research facilities and established a Computer Lab. Various research schemes under DST, UGC, MNES, UCOST etc. have been completed in the Department.
Faculty members of the department are actively engaged in research in the different fields namely (a) Condensed Matter Physics/Materials Science Experimental Studies preparation, characterization and measurements ferroelectric systems/Poly crystals, ultrasonic investigations of Polymers and liquids; Theoretical studies of dielectric and ferroelectric properties of crystals; Theoretical studies of high temperature superconductors; theoretical studies of thermal properties of ferroelectrics, (b) Fluorescence spectroscopy- energy transfer, Solar Photothermal and Photovoltaic devices, (c) Nuclear and Particle Physics/Astroparticle Physics- Theoretical studies of monopoles, Gauge theory, Supersymmetry and cosmology etc. and (d) Mathematical Physics-Theoretical studies and Simulation techniques (e) Atmospheric Physics and Space Science. The department is well equipped for research work with instruments like Fluorescence Spectro Photometer (Perkin Elmer), UV and Visible Spectroscope (Perkin Elmer), Ultrasonic interferometer, High Temperature Furnace, Mossbauer Effect, Sulphur dioxide analyser, Automatic weather station and Gamma ray spectrometer.

ABOUT THE CONFERENCE

The conference will offer three days of plenary lectures, contributed papers in the form of platform and poster presentations and exhibition of different products and systems related to aerosol science and technology and allied areas.

SCOPE OF THE CONFERENCE

The conference will focus on the latest developments in air quality and aerosol science as well as the insights that the community has gained in recent years with regard to the impacts of aerosols on human health and climate change, including the following broad areas:

Advancement in Basic, Applied Sciences, Engineering, Social Sciences & Humanities (Multidisplinary-All Streams)
(i) Nuclear, Radioactive aerosols, Nano-aerosols and Material Synthesis (ii) Basic scientific research (ii) Fundamental, investigative research, theoretical or experimental, to advance knowledge without a specifically envisaged practical applications (iii) Critically thinking about issues confronting them and develop solutions that are informed not only by math, science and engineering, but by humanities and social sciences as well; to implement those solutions effectively within real social contexts; and to evaluate them in humanistic as well as technical terms. (iv) Problem-solving, innovation and development of products and processes.

Physical and chemical characteristics of atmospheric aerosols
Sub topics: (i) Studies of the physical and chemical of aerosol properties and its behavior into the atmosphere. (ii)Formation of particles from nanometer and micrometer dimensions in size, classification and measurement of transport and deposition properties, (iii) Aerosol-cloud interactions in-situ and laboratory measurement and(iv) overview of the aerosol study in the Himalayan region Uttarakhand.

Optical and Radiative Characterization of atmospheric Aerosols
Sub topics: (i) Columnar optical depth and near-surface mass concentration of aerosols (ii) Role of air mass trajectories on aerosols

Study of aerosols by various Remote Sensing Techniques
Sub topics: (i) Remote sensing via satellite, surface and airborne instrumentation measurements of aerosol (ii) Spatial and temporal coverage for validation of numerical models of aerosol production, dispersion and deposition (iii) Testing the fidelity of air quality, weather and climate models and (iv) Possibilities of the research through Aerosol remote sensing in Himalayan region Uttarakhand

Impact of Aerosol on human Health
Sub topics: (i) Role of pollution in the air borne deceases i.e asthma increase. (ii) Link between asthma and pollution (iii) Role play by the aerosols from the role play by the precursor gases near the traffic source.

Impact of aerosol on agriculture
Sub topics: (i) Emission of primary pollutants as sulphur dioxide, nitrogen oxide and particulates into the atmosphere. (ii) Effect of primary pollutants in urban areas close to the large point sources. (iii) Secondary pollutants include tropospheric (ground level) ozone, by subsequent chemical reactions in the atmosphere (iv) The reactions leading to ozone formation from primary pollutants by high temperature and light intensities.

Impact of aerosols on climate over Himalayan region
(i) Observations i.e Moderate Resolution Imaging Spectroradiometer, Cloud-Aerosol Lidar with Orthogonal Polarization etc (iii) Biomass burning and BC/OC emission (iii) Aerosol radiative forcing during biomass burning period (iv) its implications to Himalayan glaciers

Aerosol System over High Altitude Himalayas from observations and modeling and their possible effects of glaciers and radiation budget.
(i) Aerosol abundance over High altitudes Himalayas (ii) The large spatial and temporal heterogeneity of the aerosol properties and climate-impact assessment of aerosols (iii) Regional trends and discussion on the potential climate implications

Role of Aerosols on Water-Energy Resources and Development of Hydropower in Uttarakhand
(i) Water Resources overview; (ii) Regional issues, potentials, availability, utilization & development of hydropower; (iii) Springs, glaciers, snowmelting and water budgeting; (iv) Water management: rain water harvesting, water pollution, conservation, planning & polices; (v) Hydropower potential in Uttarakhand- opportunities & challenges.

CONVENER
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