

27-12-2023

DAY-1: Technical Program

08:30 AM Registration

**09:15 AM –
10:51 AM**

Inaugural Program

Venue: MAC Auditorium, IIT Roorkee

9:15-9:17	Welcome by host and invite dignitaries to the stage
9:17-9:23	Kulgeet
9:23-9:25	Lighting of lamp
9:25-9:27	Presenting bouquets
9:27-9:32	Welcome address by Organizing Secretary Prof. Sandeep Singh
9:32-9:37	Welcome by the convenor and Head Prof. Anand Joshi
9:37-9:39	Introduction of Director IITR by Prof. Anand Joshi
9:39-9:49	Address by Prof. K K Pant, Director IITR
9:49-9:51	Introduction of Chief Guest by Prof. Sandeep Singh
9:51-10:06	Address by Chief Guest Sri Sanjeev Tokhi, Director (Exploration), ONGC Videsh Ltd.
10:06-10:12	Presentation of ONGC-Videsh Trophy to Students
10:12-10:14	Introduction of Guest of Honor by Prof. Sandeep Singh
10:14-10:30	Address by Guest of Honor, Dr. Rajeev Gautam, President India, Horiba
10:30-10:32	Introduction of Guest of Honour by Prof. Sandeep Singh
10:32-10:47	Address by Guest of Honour, Dr. Prakash Chauhan, Director NRSC
10:47-10:49	Vote of thanks by Prof. Sandeep Singh
10:49-10:51	National Anthem

10:51 AM – 11:30 AM

HIGH TEA at MAC Auditorium Annex

11:30 PM – Technical Session-1A:

**12:30 PM Plenary talks on “Geospatial Techniques, Earth
(60 min) Resources, and Services”**

Venue: MAC Auditorium, IIT Roorkee

Chair: Rajeev Gautam

Co-Chair: Sandeep Singh

11:30 PM – 12:00 PM

Plenary Talk-1:

Roadmap for Net Zero: An Indian Context

Sanjeev Tokhi

12:00 PM – 12:30 PM

Plenary Talk-2:

*Space Observations for Geosciences and Geohazards:
Indian Perspective*

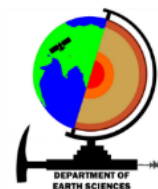
Prakash Chauhan

01:00 PM – 02:00 PM

LUNCH at the Lawn of Department of Earth Sciences



Earth Sciences in India: Challenges and Emerging Trends (ESICET-2023)
27-29th December 2023
The Department of Earth Sciences,
Indian Institute of Technology Roorkee, India



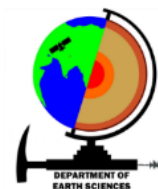
02:00 PM – Technical Session-1B: 03:30 PM Precambrian Geodynamics: Crustal evolution, metalogeny, geochronology, and tectonics (90 Min)	Chair: M.E.A. Mondal Co-Chair: Nachiketa Rai
Venue: Mithal Hall, Department of Earth Sciences	

30 min	Keynote Address: <i>Precambrian crustal evolution of the Banded Gneissic Complex of the Aravalli Craton - a whole rock elemental and Nd-Sr isotopic approach</i> M. E. A. Mondal, Iftikhar Ahmad and Ismail S. Hamidullah
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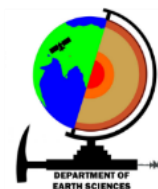
Oral presentations (15 minutes each)	<i>Origin of Auriferous Fluids in Mahakoshal Greenstone Belt, Central India</i> Prem Shankar Misra, Dinesh Pandit and Pankaj Saini
	<i>Rare Earth Elements (REE) and Carbonatite – Indian Scenario: A review</i> Amit K. Sen
	<i>Field relationship and geochemical characteristics of the metabasaltic rocks in and around Ajmer-Beawar region, central Rajasthan: Implications for mantle source and tectonic setting</i> Wamiq Mohammed Khan, M. E. A. Mondal, Iftikhar Ahmad and Kamaal Parvez
	<i>Geochemistry and Tectonic Setting of Amphibolites in the Lohit Valley, Eastern Arunachal Pradesh, North Eastern India</i> Lemba Leiphprakpam and R. K. Bikramaditya

POSTERS	<i>Gold Potential in Dharwar Craton: A Brief Review</i> Manju Sati, Rajagopal Krishnamurthi and Sakthi Saravanan Chinnasamy
	<i>Fabric Analysis of Berach Granitoid: an integrated field and Anisotropy of Magnetic Susceptibility Study</i> Abhishek Jain, Vaasudev Rawat, Sajal Goel, Sandeep Bhatt and Sayandeep Banerjee
	<i>Two stages of chlorite formation and their inferences to the alteration and mineralization of the Jahaz uranium prospect, Khetri Belt, North Delhi Fold Belt, Rajasthan</i> Priyanka Mishra and Rajagopal Krishnamurthi
	<i>Systematics of the Highly Siderophile Elements in Asteroid 4 Vesta</i> Manvir and Nachiketa Rai
	<i>Mineralogy and mineral chemistry of host rocks associated with platinum mineralization in Sittampundi Anorthosite Complex, Southern Granulite Terrain, India.</i> Amandeep Kaur, Rajagopal Krishnamurthi, Nachiketa Rai

03:30 PM – 04:30 PM	POSTER SESSION WITH HIGH TEA at the Lawn of Department of Earth Sciences
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04:30 PM – Technical Session-1C: 06:00 PM Sedimentary and earth surface processes (90 Min)	Venue: Mithal Hall, Department of Earth Sciences	Chair: Sudhir Kumar Co-Chair: Pradeep Srivastava
30 min	Keynote Address: Impact of Hydrological Cycle and Climate Change on Earth Surface Processes Sudhir Kumar	
Oral presentations (15 minutes each)	<i>Geological signatures of palaeo-tsunami events along the Gujarat coast, Western India: Implications in vulnerability and sustainable development</i> S. P. Prizomwala	
	<i>Tectono-provenance and paleoweathering of Cenomanian Nimar sandstone of Bagh group in Lower Narmada valley, Dhar district, Central India: Inferences from Petrography and Geochemistry</i> Mohd Adil, Garima Singh and S. H. Adil	
	<i>Provenance, tectonic setting, paleoclimate and paleoweathering patterns of Maastrichtian siliciclastic rock of Lameta Formation in Sagar inland basin, Central India</i> Garima Singh, Mohd Adil and S. H. Adil	
	<i>Rock Weathering Dynamics in Himalaya: Insights from Metagenomics and U-series Isotopes</i> Sohan Kumar, Vishakha Bisht, R. Islam, A. Kumar, Naveen K. Navani, Anthony Dosseto, Florian Dux, P.O. Suresh, Pradeep Srivastava	
POSTERS	<i>Fault-controlled carbonate mass flow sequences along the eastern margin of the Pranhita-Godavari rift, India</i> P. Pati and M. L. Dora	
	<i>Paleoenvironmental and palaeoclimatic conditions in Bhimtal, Kumaun Lesser Himalaya, India between 40 and 24 ka using granulometric analysis</i> Manmohan Kukreti and B.S.Kotlia	
	<i>Hydrothermally brecciated carbonate rocks within Late Cretaceous Bagh Group, Central India: Implications on genesis and paleoenvironment</i> Prantik Mondal and Biplab Bhattacharya	
	<i>Assessing spring occurrence and identifying rejuvenation prospects for spring water resources using geospatial data in the Lesser Himalaya</i> Praveen Kumar and Pallavi Banerjee Chattopadhyay	
	<i>Assessing Groundwater Prospects in Rapidly Urbanizing Coastal Regions for Sustainable Development</i> Ananya Muduli and Pallavi Banerjee Chattopadhyay	
<i>Implications of ichnofabric analysis on sediment-organism interactions: A case study from Eastern India</i> Arnab Bhattacharya and Biplab Bhattacharya		
07:00 PM GALA DINNER at the Lawn of Department of Earth Sciences		



28-12-2023

DAY-2: Technical Program

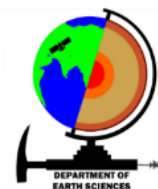
<p>09:30 AM – Technical Session-2A: 11:00 AM Geophysical techniques and deep earth studies (90 Min) <i>Venue: Mithal Hall, Department of Earth Sciences</i></p>	<p>Chair: Sumer Chopra Co-Chair: Simanchal Padhy</p>
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30 min.	<p>Keynote Address: <i>Strong motion studies in Gujarat for research, hazard assessment and society</i> Sumer Chopra</p>
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Oral Presentations (15 minutes each)	<p><i>Earthquake hazard associated with the 2020 Samos, Greece sequence: Evidence from Coulomb stress modeling</i> R. B. S. Yadav, Rajiv Kumar, Neeru Dhiman and Manisha Sandhu</p> <hr/> <p><i>Characterizing Coda wave attenuation and geometrical spreading factor for the Saurashtra region, Gujarat, India</i> Manisha Sandhu, Indu Bala, Santosh Kumar and Dinesh Kumar</p> <hr/> <p><i>SeisRTM: A make in India Initiative for Software Development for Reverse Time Migration (RTM) to aid Oil and Gas Data Processing for Seismic Imaging</i> Richa Rastogi, Abhishek Srivastava, Saheb Ghosh, Anand Joshi, Suhas Phadke, Nithu Mangalath, Bhushan Mahajan, Monika Gawade, Laxmaiah Bathula, Hrishikesh Kumbhar, and Saurabh Sharma</p> <hr/> <p><i>Constraining earthquake faults using focal mechanism solutions in Kachchh region of Gujarat</i> Charu Kamra and Sumer Chopra</p>
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POSTERS	<p><i>Fiber Optics Sensor Applications in Extractive Industry</i> Sunjay</p> <hr/> <p><i>Development of Matlab-Based Code for Joint Inversion of 1d Mt and DC Resistivity Data</i> Amit Bajpai and Arun Singh</p> <hr/> <p><i>Mapping of North Almora Thrust using two dimensional refraction (2d-srt) survey</i> Mohit Pandey, Anand Joshi, Jyoti Singh, Saurabh Sharma</p> <hr/> <p><i>Delineation of groundwater potential zone for sustainable groundwater management using geophysical and geospatial approach in the Cratonic terrain</i> Ravi Shankar Dubey and Pallavi Banerjee Chattopadhyay</p> <hr/> <p><i>Crustal studies below Brahmaputra Valley, North-East India</i> Neeharika Shukla, Sagarika Mukhopadhyay and Devajit Hazarika</p> <hr/> <p><i>Reverse Time Migration of 2D isotropic Basin model using staggered-grid finite difference scheme</i> Saurabh Sharma, A. Joshi, Richa Rastogi, Abhishek Srivastava, Bhushan Mahajan, Nithu Mangalath</p>
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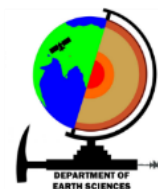
11:00 AM – 12:00 PM	<p>POSTER SESSION WITH HIGH TEA <i>at the Lawn of Department of Earth Sciences</i></p>
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12:00 PM – Technical Session-2B: 01:30 PM Emerging Techniques and tools: Energy Resources, Energy security and Infrastructure (90 min)	Chair: Dinesh Kumar Co-Chair: S. P. Pradhan
Venue: Mithal Hall, Department of Earth Sciences	
30 min.	Keynote Address: Estimation of Earthquake Source Parameters: An Alternative Approach Dinesh Kumar and Aakanksha
Oral presentations (15 minutes each)	<i>Study of CO₂ Fracturing Technique for Shale Gas Productivity in Assam Arakan Basin, India</i> Annapurna Boruah and Sankari Hazarika
	<i>Preserving Cultural Heritage in Parts of Eastern India: Archaeo-Geophysical Studies</i> Sanjit Kumar Pal, Anil Kumar, Anshumali, Subhendu Mondal, Debajit Ghosh, Soumyashree Debases Sahoo and Vivek Vikash
	<i>Making Uniform Scattering Seismograms for Earthquake Analysis with Symmetric Autoencoders</i> Isha Lohan, Madhusudan Sharma, Abhinav Pratap Singh, Pawan Bharadwaj
	<i>Stable slope angle using Q-Slope method along transportation route in the perilous Himalayan region</i> Atif Ahamad, Wali Akhtar and Tariq Siddique
POSTERS	<i>Assessing Slip Hazards: Quantitative Analysis of Fault Reactivation due to CO₂ injection in Hydrocarbon Reservoir</i> Mohd Sharique Siddiqui, Pranay Vilas Bhapkar and Sarada Prasad Pradhan
	<i>Paleoneurology, a resurgent field of research in vertebrate paleontology: applications and the Indian context</i> Aatreyee Saha and Sunil Bajpai
	<i>Estimation of Physico-mechanical properties of Upper Siwalik Sandstone using field (MASW) and laboratory test, Himachal Himalaya, India</i> Anamika Sahu, Sandeep Singh, Narendra K Samadhiya
	<i>Prediction of Peak Ground Acceleration Using Machine Learning Technique</i> Anushka Joshi and Balasubramanian Raman
	<i>DESI data for detection of rare earth elements in peralkaline rocks from Siwana Ring Complex, Rajasthan, India</i> Saraah Imran and Ajanta Goswami
	<i>Current status of Microplastic research in India</i> Nidhi Chaudhary and A S Maurya
	<i>Sedimentary DNA and biomarker based study from monsoon dominated lake in Garhwal Lesser Himalaya, India</i> Sushmita Singh, Vishakha Bisht, Ambili Anoop, Naveen Kumar Navani, Abhayanand Singh Maurya, Pankaj Kumar, Arvind Bhatt, Pradeep Srivastava
	<i>Integration of PRISMA Hyperspectral Imagery and Field-Based Hyperspectral Data for delineation of Host Rock Lithology in the Neem Ka Thana Cu belt, Rajasthan, India.</i> Angana Saikia, Ajanta Goswami and Bijan Jyoti Barman
01:30 PM – 02:30 PM	LUNCH at the Lawn of Department of Earth Sciences



Earth Sciences in India: Challenges and Emerging Trends (ESICET-2023)
27-29th December 2023
The Department of Earth Sciences,
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02:30 PM – Technical Session-2C:
04:00 PM Emerging Techniques and tools: Instrumentations in Earth Sciences
(90 min)
Venue: Mithal Hall, Department of Earth Sciences

Chair: Amit Kumar Sen

Co-Chair: Ajanta Goswami

Oral Presentations (30 min each)	<i>HORIBA Raman Microscope as a tool for the study of geological materials</i> Sudeeksha HC
	<i>HORIBA Solution for particle sizing of geological materials</i> Namrata Jain
	<i>HORIBA X-Ray Fluorescence Technology for Geo-material research</i> Suman GR

04:00 PM – 04:30 PM HIGH TEA at the Lawn of Department of Earth Sciences

04:30 PM – Technical Session-2D:
06:00 PM Geodynamics of the Himalayas and deep structures
(90 min)
Venue: Mithal Hall, Department of Earth Sciences

Chair: O. P. Mishra

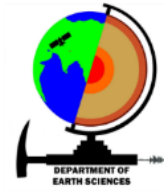
Co-Chair: Sudheer Kumar Tiwari

30 min. **Keynote Address: The Himalayan seismotectonics and seismogenesis: Intricacies and integrated research**
O. P. Mishra

Oral Presentations (15 minutes each)	<i>Flexural and Gravity Modelling of Himalayan Foreland Basin</i> Shubhajit Sengupta and A. Vasanthi
	<i>Role of Pre-Himalayan Deep-Seated Faults in Influencing the Tectonic Geomorphology and Seismicity of the Himalayas and the Peripheral Foreland Basin</i> Rajkumar Kashyap
	<i>Characterization of Microstructural Features in Cataclastic Rocks within the Almora Crystalline Zone: A Comprehensive Study</i> Sunil Kumar Yadav, M Vaisakhi and Sudheer Kumar Tiwari
<i>Analysis of SL- Index, SL-hot spot, and concavity index for the extraction of knickzones over the Upper Alaknanda, Western Himalaya for the prolonged river profile</i> Priyanka Negi, Ajanta Goswami and Girish Chandra Joshi	

06:30 PM – 07:30 PM CULTURAL PROGRAM at the O.P. Jain Auditorium

08:00 PM DINNER at the Lawn of Department of Earth Sciences



29-12-2023

DAY-3: Technical Program

09:30 AM – 11:10 AM (100 Min) **Technical Session-3A:
Natural Hazards: Past and present records,
Disaster Risk Reduction and Mitigation**
Venue: Mithal Hall, Department of Earth Sciences

Chair: Sanjay Rana

Co-Chair: Ashutosh Chamoli

20 min. **Keynote Address:** *Seismic hazard assessment: Indian context*
M. L. Sharma

20 min. **Keynote Address:** *Geophysical investigations to deal with uncertainties in difficult ground conditions*
Sanjay Rana

Oral presentations
(15 minutes each)

Role of Catastrophe Insurance in Disaster Risk Mitigation and Role of Earth Scientists in Catastrophe Insurance: An Industry Perspective
Nipun Kapur

Ice sheet surface velocity and associated ice mass loss from Niwl Basin, East Antarctica
Pradeep Kumar, Deepak Y. Gajbhiye, Vikash Chandra and Ajanta Goswami

Flood hazard susceptibility mapping by integration of remote sensing using hybrid machine learning algorithm
Chiranjit Singha

Utilizing Machine Learning Techniques in Conjunction with the Stumpf Model for Bathymetry Extraction and Glacial Lake Outburst Flood (GLOF) Modeling in Drang Drung Glacial Lake, Ladakh, India
Joshal Kumar Bansal, A. Goswami, R. Ramsankaran, V. Singh, G. Kulshresht

POSTERS

Flood susceptibility analysis in the lower reaches of Brahmani River, Odisha
Aditya Kumar Anand and Sarada Prasad Pradhan

Flood Risk Assessment in the Gandak Basin using multi-criteria decision analysis: A hydro-geomorphic approach
Arushi Jha, Naresh Chandra Gupta, Bratati Dey

Modelling of the scenario of the major earthquake in the Uttarakhand region
Jyoti Singh, Anand Joshi, Mohit Pandey, Saurabh Sharma and Sandeep Arora

Impact of blast-induced damage zones on the stability of a cut-slope along a Himalayan highway: a continuum modeling approach
Som Nath, Nachiketa Rai, Ashok Kr Singh and Harsh Kr Verma

Lithological characterization of the Sittampundi Anorthositic Complex using Multispectral and Hyperspectral Data
Richa Upadhyay Sharma, Ajanta Goswami, Mamta Chauhan

Geotechnical Assessment and Stability Modeling of Rock Slopes along NH-09: A case study in the Kumaun Himalaya
Piyush Kumar Singh, Saurabh Kumar, Mohd Sharique Siddiqui, Sarada Prasad Pradhan



Development of empirical formulation for estimation of co-seismic slope displacement through regression analysis

Kumari Sweta, R. Kumar and A. Goswami

Increase in Forest Fire Events - The Potential Influence of Meteorological Variables

Shashi Gaurav Kumar and Ajanta Goswami

GIS-Based Rainfall-Runoff Modelling for Dibang River Catchment in Eastern Himalaya

Tapas Kumar Nahak and Ajanta Goswami

Glacial Lake Outburst Flood Hazard Assessment and Modelling in Parts of Himalaya

Lucky Shukla and Ajanta Goswami

Snowmelt Assessment in the Upper Beas Region using WINSRM and SWAT Models

Mayank Upadhyay

11:10 AM – 12:30 PM POSTER SESSION WITH HIGH TEA
at the Lawn of Department of Earth Sciences

12:30 PM – 01:30 PM Valedictory Session
Venue: Mithal Hall, Department of Earth Sciences

01:30 PM – 02:30 PM LUNCH *at the Lawn of
Department of Earth Sciences*
