



**MANIPAL UNIVERSITY
JAIPUR**

MUJ/Q&C/22/F/1.01

Event Report Format



**MANIPAL UNIVERSITY
JAIPUR**

FACULTY OF ENGINEERING

SCHOOL OF CIVIL & CHEMICAL ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

APPLICATIONS OF REMOTE SENSING & GIS IN GEOSCIENCES

EXECUTIVE DEVELOPMENT PROGRAM

17-21 OCTOBER 2022



1. Introduction of the Event

This Five-Day National-level Executive Development Program (EDP) was organized as a part of spreading awareness about the applications of remote sensing and geographic information system (GIS) in different domains of geosciences among the youths who wish to explore the possible opportunities through higher studies in earth sciences with remote sensing technology. The event had an intention to improve the admissions to the new honours program in Civil Engineering with specialization in geoinformatics in the year 2022.

2. Objective of the Event

- To spread the awareness about the applications of geoinformatics in geosciences.
- To strengthen the admission-status of the department in the year 2022.

3. Beneficiaries of the Event

All students, their parents and faculty members who wish to pursue higher studies in the stream of geoinformatics are the beneficiaries of the event.

4. Details of the Guests

- a. Dr Avinash Kumar, Scientist E, National Centre for Antarctic & Ocean Research (NCAOR), Goa
- b. Prof Rohit Goyal, Department of Civil Engineering, MNIT, Jaipur
- c. Dr Abin Varghese, Mahatma Gandhi University, Kottayam, Kerala
- d. Dr Priyam Roy, Scientist SE, National Remote Sensing Centre, Hyderabad, Telangana
- e. Mr Anand Sebastian, Scientist & Head, Centre for Geoinformatics, Natural Resource Management (NRM), Integrated Rural Technology Centre (IRTC), Kerala

5. Brief Description of the event

The first day's (17 October 2022) online session was started at 2 pm with a welcome address by the convener of the event Dr Harshavardhana B G, followed by Prof Bhavana Tripathi, Director, School of Civil and Chemical Engineering introducing about the University and then Prof Meena Kumari Sharma, Head, Department of Civil Engineering, detailing about the department and the EDP-2022. After briefing out the experiences and achievements of Dr Avinash Kumar,

he started his talk on applications of GIS in polar sciences and continued till 4 pm. Several questions were raised by the participants, that were answered appropriately. In the remaining days there were talks by Prof Rohit Goyal, Dr Abin Varghese, Dr Priyam Roy and Mr Anand Sebastian on the applications of GIS in Hydrogeology, Digital Elevation Model, Geohazards and Natural resource management respectively. All the participants bagged tremendous knowledge by the end of the session. As there were frequent questions and answer sessions in between the discussions also.

On the last day (21 October 2022) of the event, Prof Meena Kumari Sharma, Head, Department of Civil Engineering, thanked all the resource persons for sharing the immense knowledge during the past five days. She also thanked everyone for being the part of the program directly and indirectly for making it successful. Finally, once again Dr Harshavardhana B G, Convener, EDP-2022 whole-heartedly thanking all, anticipated the similar support and help from everyone for such events in the future. Soft copies of participation certificates for the registered participants and Appreciation Certificates for the Resource Persons were sent later on.


6. Photographs



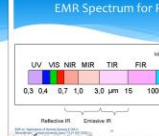
Remote Sensing Data

- Remote sensing data is a versatile data which not only attracts provides much of the useful data/information but may also be used to infer a lot of other unavailability data.
- In the literature Remote Sensing data has been used for:
 - Land use/cover (Liu et al., 2002)
 - Water stress detection (Catalano et al., 2003)
 - Land resources (Dunn et al., 1999; Sible and Smith, 1992)
 - Water resource management (Baskinsson et al., 2000; Thomann et al., 2002)

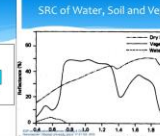
Schematic Diagram of RS



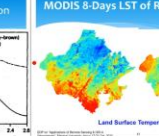
EMR Spectrum for RS




SRC of Water, Soil and Vegetation



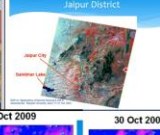
MODIS 8-Days LST of Rajasthan State



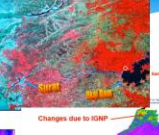
MSS, 1975 Images of North Part of Jaipur District



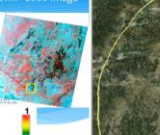
ETM+ 2000 Image




Changes due to INMP



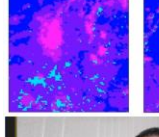
Recent Study: Urban Heat Island of Jaipur City



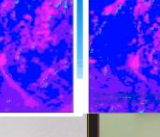
Sub-Basins of Segmented Streams



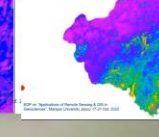
26 Oct 2009



29 Oct 2009




30 Oct 2009



Legend

Jaipur Urban Area

Jaipur Urban Area



EDP-2022: DAY-2 TOPIC : GIS and Remote Sensing Applications in Hydrogeology

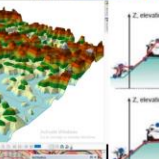
Triangular Irregular Network (TIN)

Triangular irregular networks (TIN) are a form of vector based digital elevation data that are used to represent a surface in a 3D space. The surface is represented as a series of triangles that are connected at their vertices. There are different methods of interpolation to form these triangles, such as Delaunay triangulation or distance ordering.

Free Data Sources

- Open Street Map: Topographic Vector (OSM)**
This is an online global digital elevation model that is a vector network of about 50 meters covering most of the world with almost vertical height accuracy of half meter. Open Street Map data is being licensed on the OSM Open Data License.
- ASTER Global Digital Elevation Model**
A global elevation model (DEM) and other data sets of Advanced Very High Resolution Thermal Emission and Reflection Radiometer (ASTER). ASTER DEMs feature a global resolution of 30 meters with a maximum of 20 meters in the United States. Vector elevation data is available for the ASTER DEM data for free from the "USGS Earth Explorer".
- JAXA Global ALOS 30 Meter**
The ALOS World 3D is a global digital elevation model (DEM) provided by the Japan Aerospace Exploration Agency (JAXA). It is the first global digital elevation data set that is free of charge. The ALOS World 3D is a global digital elevation model (DEM) provided by the Japan Aerospace Exploration Agency (JAXA). It is the first global digital elevation data set that is free of charge. The ALOS World 3D is a global digital elevation model (DEM) provided by the Japan Aerospace Exploration Agency (JAXA). It is the first global digital elevation data set that is free of charge.
- India's Public Domain**
Cartographic 1:50,000 and other vector DEMs available for entire India. For identification and other details go through Survey website at <http://180.180.180.180/india/publicdomain/india.htm>


Aspect




Application:
 -Can find all north-facing slopes on a mountain as part of a search for the best slopes for ski runs.
 -Calculate the solar illumination for each location in a region as part of a study to determine the diversity of life at each site.
 -Identify areas of flat land to find an area for a plane to land in an emergency.

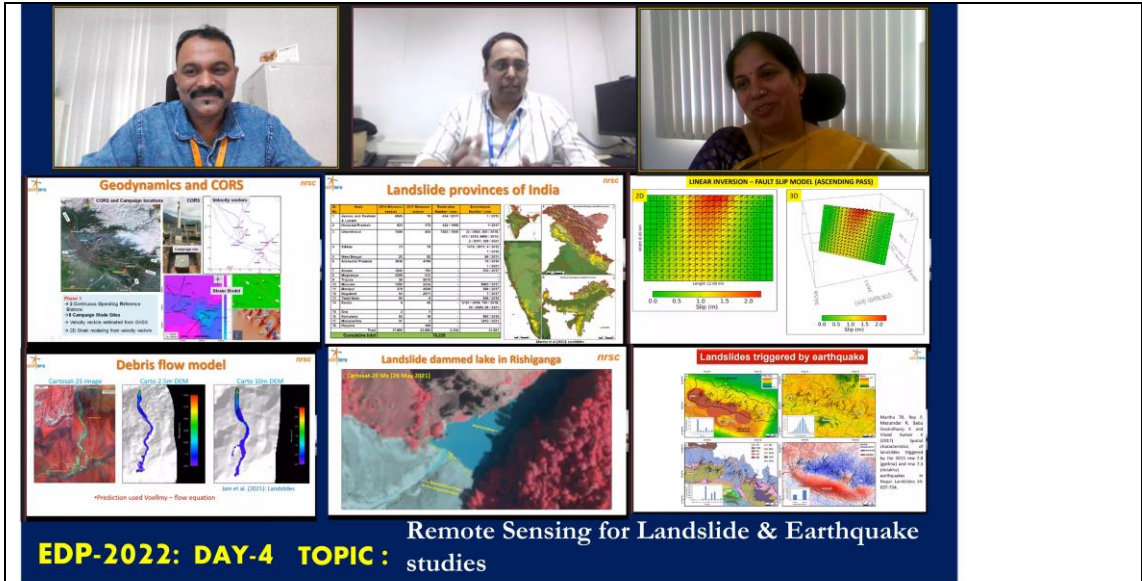
Representations of the Earth

Mean Sea Level is a surface of constant gravitational potential called the **Geoid**.

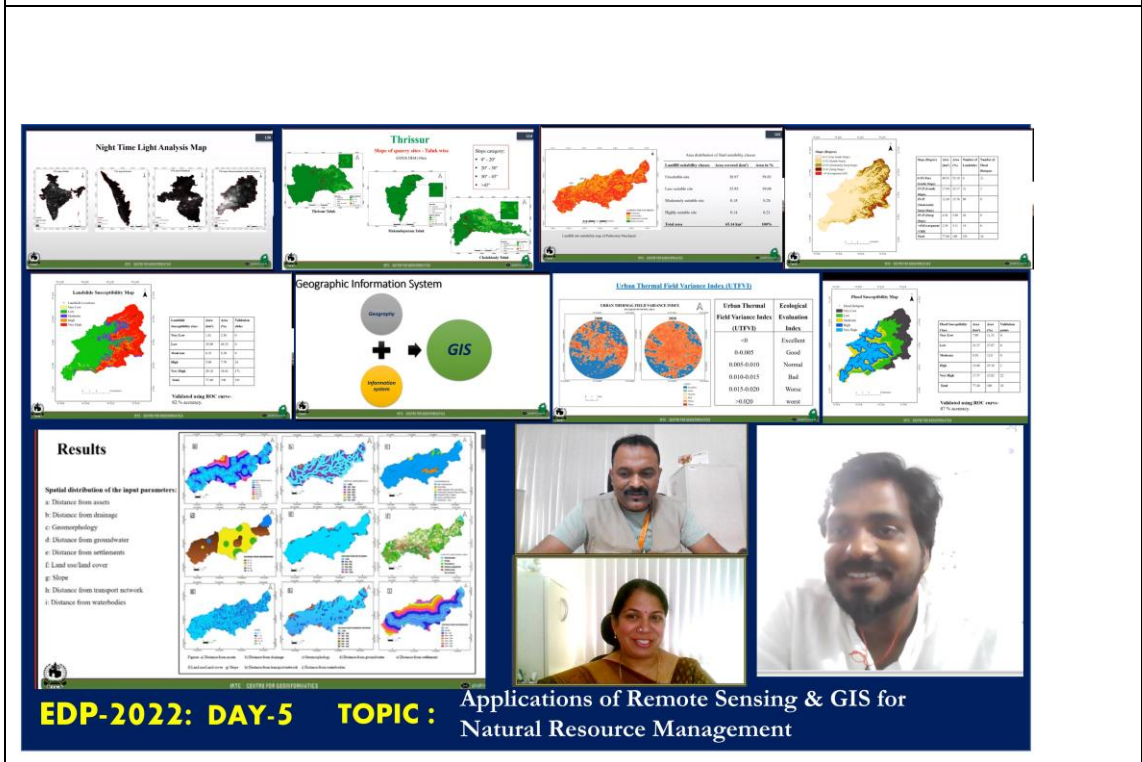




EDP-2022: DAY-3 TOPIC : Applications of Digital Elevation Model in Geoscience



EDP-2022: DAY-4 TOPIC : Remote Sensing for Landslide & Earthquake studies



EDP-2022: DAY-5 TOPIC : Applications of Remote Sensing & GIS for Natural Resource Management

7. Brochure or creative of the event



MANIPAL UNIVERSITY JAIPUR
(University under section 3 of U.P. Act 1956)

Executive Development Program

Applications of Remote Sensing & GIS in Geosciences

17 – 21 October 2022

Last Date of Registration
16 October 2022

About the Program

Planet Earth, known as the blue sphere, has been evolving since its birth around 4.5 billion years ago and retains several mysteries that are still being explored. Geology is the science that help in understanding the earth, its origin, evolution, nutrient assemblage and structures. Thus, it has been a great contribution from the earth-geo-scientists in knowing more about the dynamic earth. Presently, the application of Remote sensing (RS) and Geographic Information System (GIS), a new approach that helps visualising the earth in its present form, is also proven to be an efficient tool to decipher the changing earth surficial features. Its applications now, are pervading in almost all domains of geology and associated sciences.

In this context, the Executive Development Program (EDP) titled "Applications of Remote Sensing and GIS in Geosciences" has been pondered to enlighten the learners with the applications of RS & GIS in climatology, natural resource management, coastal geomorphology, hydrogeology, geohazards and geodynamics. Eminent resource persons from industry and academia from reputed organisations of India would be sharing their professional expertise through this national event. The knowledge obtained through this program would be useful for exploring the possible research opportunities with the applications of RS and GIS techniques. Therefore, it is planned to organise this program for the benefit of students, research scholars, faculty members and field professionals of science and engineering disciplines.

Organising Committee

Chief Patron
Mr. Vaitheeswaran S (Chairperson, MUJ)

Patron
Prof G K Prabhu (President, MUJ)

Co-Patrons
Prof N N Sharma (Pro-President, MUJ)
Prof Nitu Bhatnagar (Registrar, MUJ)

Advisory Committee
Prof Arun Shambhag (Dean, FoE, MUJ)
Prof Bhavna Tripathi (Director, SCCE)
Prof Meena Kumari Sharma (Head, Dept of Civil Engineering)

Convener
Dr Harshavardhana B G
Associate Professor
Dept of Civil Engineering

Registration Fee
Students & Others: Rs 250/-
Faculty Members: Rs 1000/-
Field Professionals: Rs 1500/-

Registration Link
https://www.payumoney.com/customer/users/paymentOptions/#/1011F8DA7C0FCB5EC870FB852899DD08/EDPHARSH_2022/2-17853

Organiser
Department of Civil Engineering



Resource Persons

Dr Avinash Kumar
Scientist-E, NCPOR
Goa

Prof Rohit Goyal
Dept of Civil Engineering
MNIT, Jaipur, Rajasthan

Dr Vipin J Markose
Mahatma Gandhi University
Kottayam, Kerala

Dr Priyam Roy
Scientist SE
NRSC, Hyderabad,
Telangana

Mr Anand Sebastian
Scientist & Head
Centre for Geoinformatics
NRM, IRTC, Kerala

About the University

The Manipal Education Group, with its heritage of excellence in higher education for over 60 years, launched Manipal University Jaipur (MUJ) in 2011. Manipal University Jaipur, Rajasthan is a co-educational, residential, private research institute, affiliated with University Grants Commission (UGC) and All India Council for Technical Education (AICTE). It is the first university in the state of Rajasthan to be accredited with A+ grade by NAAC. The permanent campus of the university, set up on 122 acres of land at Dohmi Kalan village near Jaipur, is certainly one of the best universities in the region.

The university has more than 500 well-qualified faculty members and about 12,000 students. In line with Manipal University's legacy of providing quality education, the university stands high in its infrastructure and uses the latest and innovative methods, and technology to impart education that includes the state of art laboratory facilities and modern library. The university offers courses at UG, PG and doctoral levels, across diverse streams like Engineering, Architecture, Planning, Fashion Design, Interior Design, Fine Arts, Hospitality, Humanities, Journalism and Mass Communication, Basic Sciences, Law, Commerce, Computer Applications and Business Management.

About the Department

The Department of Civil Engineering at Manipal University Jaipur, under the umbrella of School of Civil and Chemical Engineering (SCCE), was established since the inception of the university in 2011. Being associated with the Institution of Engineers, India (IEI) and Indian Concrete Institute (ICI), the department has been providing quality education to students for making them successful professionals. Including UG, the department is running three PG courses and an appreciable count of doctoral students have been pursuing research in various fields of civil engineering currently. In addition, a new B Tech Civil (Honours) program in Geoinformatics will be launched from the upcoming semester 2021-22. Having equipped with high-level research laboratories, since beginning the department has been serving the humanity with the aim to meet the global challenges through the innovation, development and application of modern technology.

Contact for Information
Dr Harshavardhana B G
+91-7568621591
harshavardhana.ganesh@jaipur.manipal.edu

Organiser
Department of Civil Engineering

8. Schedule of the event

17-21 October 2022 from 2 pm to 4 pm

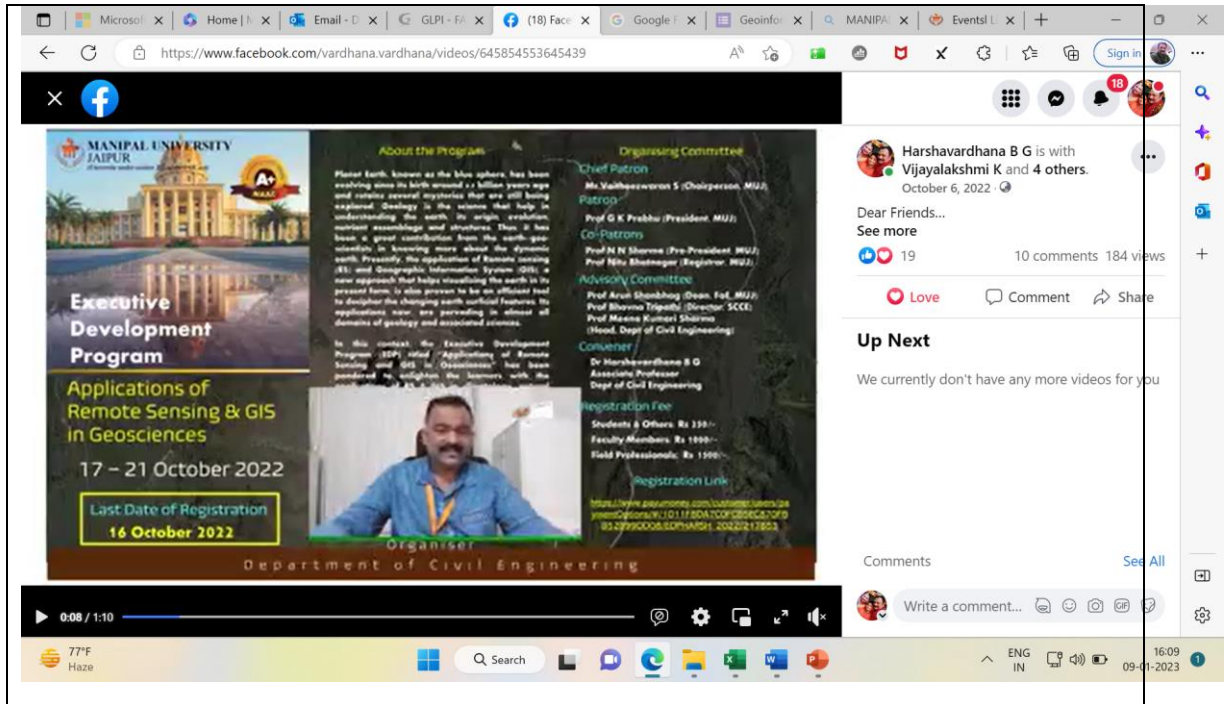


9. Attendance of the Event: Total attendee- 71

SI No	Name of Attendee	SI No	Name of Attendee	SI No	Name of Attendee	SI No	Name of Attendee
1	Aadil Khalid Khan	21	Jyotiraditya Singh Parihar	41	Dr Bhavna Tripathi	61	Sagar Gupta
2	Aashish	22	Karan Singh Rathore	42	Dr Gaurav Sancheti	62	Sandeep Kumar
3	Abhishek Yadav	23	Karthik Mukesh Nair	43	Dr Meena Kumari	63	Sandesh Akash Panpaliya
4	ABHISHEK KUMAR SINGH	24	Mayank Sharma	44	Dr Priyansha Mehra	64	Sanjeet Tanwar
5	Adhyan Aditya	25	Mayank Singh	45	Dr Sanchit Anand	65	Sarthak Morwal
6	Aditya Saini	26	Mayank Tomar	46	Dr Tej Bahadur	66	Shivsagar Tiwari
7	Aftab Sheikh	27	Mohak Goel	47	Utkarsh Agrawal	67	Shubham Bhagwat Landge
8	Akhilesh Tarkar	28	Raghuvesh Tiwari	48	Durgesh Kumar Jha	68	Shweta Suresh Kodihal
9	Akshit Chaurasia	29	Sourav Kumar Das	49	Eshaan Mishra	69	Sourav Kumar Das
10	Akshita Joshi	30	Vikram Singh Kashyap	50	Harshit Gothwal	70	Sparsh Khare
11	Animesh Mishra	31	Om Sharma	51	Hemant Kumar	71	Tanya Singh Thakur
12	Annu Aman	32	Onkar Saxena	52	Hemant Medatwal		
13	Anubhav Singh Rana	33	Peter Singh	53	Hemant Singh Jadoun		
14	Anurag Meeral	34	Piyush Sharma	54	Jasveer Dewasi		
15	Ashutosh Kumar	35	Pratyush Gaurav	55	Prathibha A		
16	B Ramya	36	Prince Kumar	56	Akshita Joshi		
17	Devyash Jain	37	Raghuvesh Tiwary	57	Vishal Gautam		
18	Divya Prakash Dubey	38	Ritwij Raushan	58	Yashwardhan Singh		
19	Divya Vashistha	39	Rohit Goyal	59	Dr Priya K		
20	Divyam Jain	40	Sagar Chouhan	60	Bhadresh Kumar		

10. News Publication- News printed in newspaper or online links (if any) for news – insert images)

[\(18\) Facebook](#)



11. Feedback report of the Event

NIL

12. Link of MUJ website stating the event is uploaded on website

[APPLICATIONS OF REMOTE SENSING & GIS IN GEOSCIENCES \(manipal.edu\)](https://www.manipal.edu/academics/extension-education/online-courses/remote-sensing-and-gis-in-geosciences)



The screenshot shows a web browser window displaying the Manipal University Jaipur website. The page features a navigation menu with options like 'ABOUT US', 'FACULTIES', 'ADMISSIONS', 'ACADEMICS', 'RESEARCH', 'LIFE AT MUJ', and 'ONLINE COURSES'. The main content area is titled 'APPLICATIONS OF REMOTE SENSING & GIS IN GEOSCIENCES' and includes details such as the start and end dates (October 17, 2022 to October 21, 2022), the category (National-level Executive Development Program), and a description of the 5-day program. It also lists eminent speakers like Dr. Avinash Kumar, Prof. Rohit Goyal, Dr. Vipin Marcose, Dr. Priyam Roy, and Mr. Anand Sebastian. A weather widget at the bottom left shows 77°F and Haze. A system tray at the bottom right displays the date 09-01-2023 and time 16:14.

[KPI54b_Dr Harshavardhana B G.pdf \(manipal.edu\)](#)

26-12-2022

Seal and Signature of Head with date