



SPG-Banaras Hindu University Student Chapter Report 2022-2023

Office bearers of SPG BHU Student Chapter for the academic year 2022-2023

PRESIDENT	ANSHUMAAN SARRAF (3rd Year)
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TREASURER	AVINASH SHUKLA (2nd Year)
EVENT MANAGER	JYOTI SHUKLA (2nd Year)

Various events organized by SPG BHU Student Chapter for the academic year 2022-2023

The events were organized in a structured manner. Firstly, a talk was conducted in the Department of Geophysics, BHU which was followed by an offline event conducted by the students of SPG-BHU, where local people within the campus were targeted and at the end of the academic year our annual fest Geo-Aakarshan was organized in an online mode.

1. Interactive session by Dr. Harilal (13th July 2022)

Dr. Harilal is an *ex-Executive Director and Former Head of Institute KDMIPE, Oil & Natural Gas Corporation (ONGC) Limited, Dehradun*. He interacted with the then enrolled postgraduates and research scholars of Geophysics Department, BHU and gave an exposure to one of the most ignited topics: *The Future of E & P Industries (Reminiscences & Interference)*. There were question and answer sessions for the students at the end which led to the spark of exploring the new world of industry in the young minds.

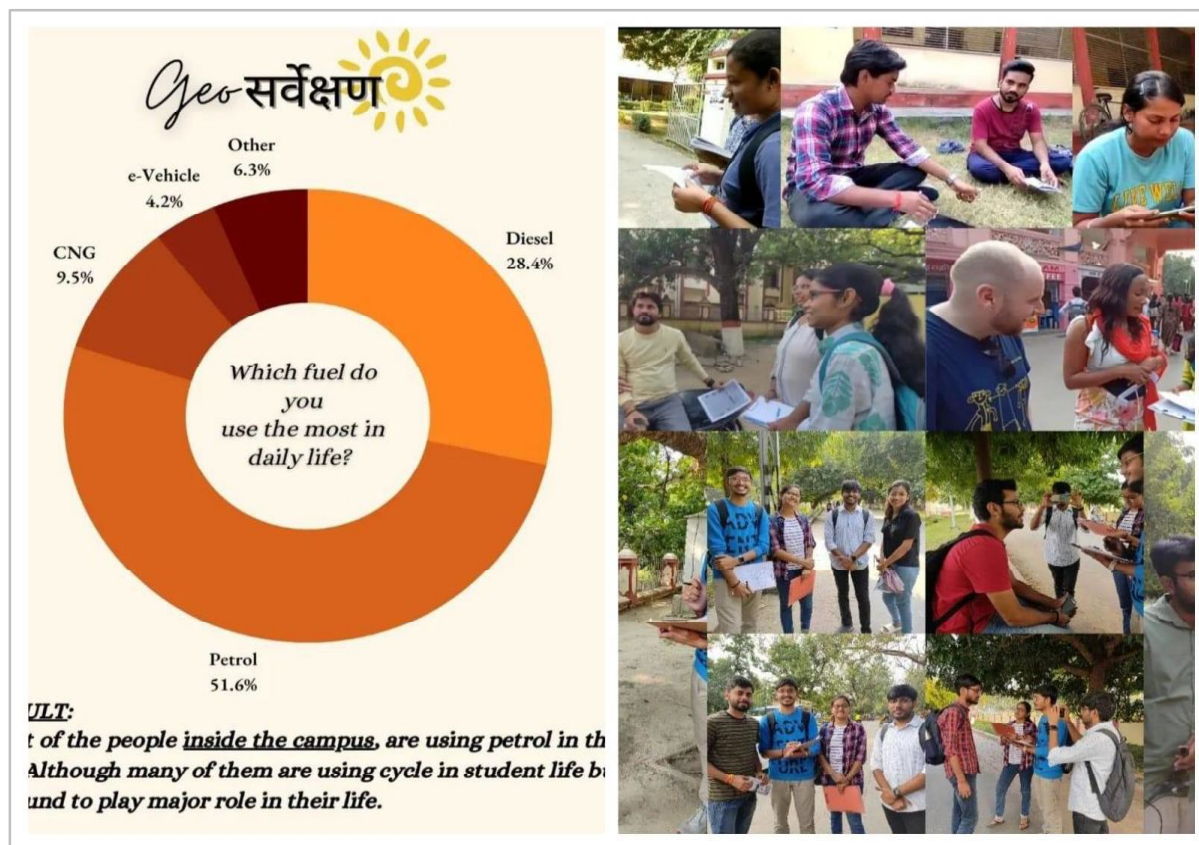
The poster is for an event titled "A live Interaction on E & P Industry of the Future (Reminiscences and Interference)". It is organized by SEG & SPG BHU Student Chapters. The event is scheduled for 13.07.2022 at 12 noon onwards in Room no. 5, Department of Geophysics, BHU. The featured speaker is Dr. Harilal, Ex-Executive Director and Former Head of Institute KDMIPE Oil and Natural Gas Corporation Limited (ONGC). The poster includes logos for SPG and SEG, a portrait of Dr. Harilal, and a list of faculty advisors: Prof. Rajeev Bhatla (Head of Department), Prof. Manoj Kumar Srivastava and Prof. Uma Shankar (Faculty Advisors), and Dr. Sandeep Arora and Dr. Rohtash Kumar (Co-Faculty Advisor). The background features a dark blue space theme with planets and stars.

2. GeoSarvekshan (20th October 2022)

Our chapter successfully organized its first offline event called "Geo- Sarvekshan ", a survey which was conducted on 20th October 2022. This was inaugurated by honorable Prof. Rajeev Bhatla, Head of department of geophysics, BHU, under the supervision of our faculty advisor Dr. Rohtash Kumar and Co-faculty advisor Dr. Satya Prakash Maurya.

This survey was conducted at the different locations in the BHU campus itself in which random people, visitors, tourists, and students coming from different places were asked a series of questions related to geo-sciences. Also, a pamphlet was given to the participants whose aim was solely to give them an exposure to the world of petroleum and its importance.

Online posters at various social sites of SPG BHU were released. On the basis of answers given by the people, reports were created.



3. Live interaction by Dr. Anand Singh (1st November 2022)

Realizing the importance of machine learning and deep Learning in the geophysical field, the SPG-BHU in collaboration with SEG-BHU was able to conduct a successful live interaction with Dr. Anand Singh.

Dr. Anand Singh is an Assistant professor at the Institute of Technology (IIT) Bombay. He delivered a lecture on 'Role of machine learning and deep learning approaches in subsurface geophysical imaging'. He explained the various modules and programming languages like python and matlab that are being used nowadays for cutting edge research in earth sciences and our chances to grow research and development for environmental sustainability.

A Live Interaction on
Role of Machine Learning and Deep Learning approaches in Subsurface Geophysical Imaging

1 NOVEMBER, 4:00PM ONWARDS
ROOM NO. 5, DEPARTMENT OF GEOPHYSICS
BANARAS HINDU UNIVERSITY

DR. ANAND SINGH ,
ASSISTANT PROFESSOR
IIT BOMBAY

His research interests are in Geophysical inverse theory and its application in the interpretation of different data sets, main focus is in developing practical algorithms for inverting DC, EM (MT /VLF), Gravity and Magnetic data to reconstruct 2D/3D distribution of physical properties.

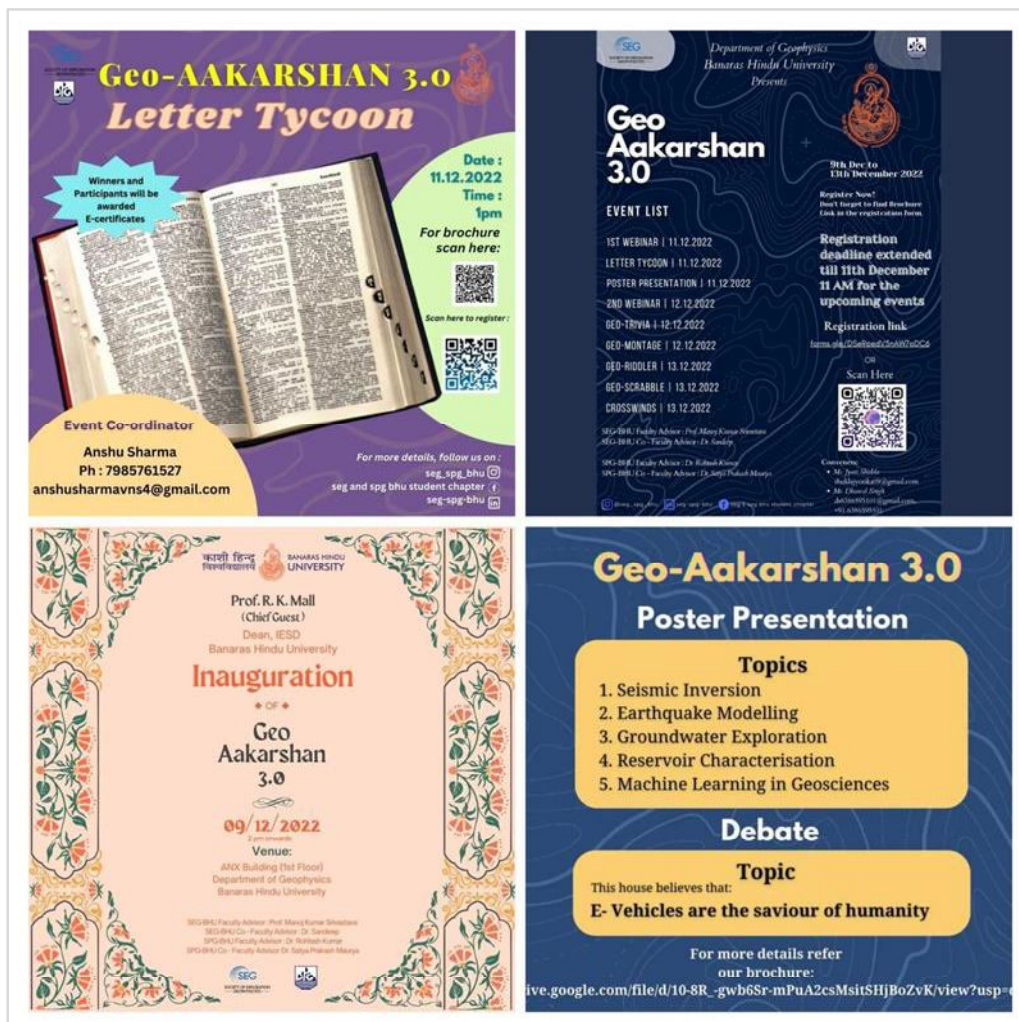
4. Annual event: Geo-Aakarshan 2022

- The chapter successfully Organized its annual event "GEO-AAKARSHAN 2022" (Third edition) of a national level festival of the geophysics department of Banaras Hindu University in collaboration with SEG student chapter BHU. This festival is aimed to bridge the gap between the industry and the academics by increasing the interaction between them. Also, it provides a platform for the young minds to showcase their new ideas which we believe can revolutionize the study of Geo-Sciences.
- The inauguration of Geo-Aakarshan was made by Honorable Prof. R. K. Mall, Dean, Institute of Environment and Sustainable Development, BHU on 9th December 2022 through offline mode .
- This was a 5-day program which commenced from 9th to 13th December 2022, in which there were a series of events organized for the students of Earth Sciences at both UG and PG level all over world.
- To give industrial exposure to the students we had organized a *webinar series* where prominent figures from various earth science backgrounds from both Industrial and academia delivered lectures on real life implementation of geosciences. Three webinars were organized as follows:

Speaker	Title of webinar
MS. VARSHA DEVI (HALLIBURTON CONSULTING, INDIA)	Carbon capture and sequestration
MR. SHANTANU CHAKRABORTY (HALLIBURTON CONSULTING, INDIA)	Seismic Attribute analysis
DR. RAMESH KRIPLANI (IITM, PUNE)	Climate Change

- Apart from these technical talks there were also events that challenged the participant's knowledge, critical thinking, awareness, presence of mind and verbal skills such as **Letter Tycoon**, an Earth Science vocabulary competition, **Poster presentation**, a poster making competition , **Geo-Trivia**, an online quiz competition separately for UG and PG, **Geo-Montage**, a collage making competition, **Geo-Riddler**, an image puzzle competition, **Geo-Scrabble**, a word puzzle, **Cross Winds (Debate)** that involved formal discussion on the allotted earth science topic , an online platform to showcase new interesting ideas in geosciences.
- Students of various educational institutes across the world such as IIT Bombay, IIT Kharagpur , IIT(ISM) Dhanbad, Kurukshetra University, Institute from Brazil, Germany, etc. participated in this fest.
- The events were judged by our honorable judges.
- Due to COVID all the events in the fest were conducted on an online platform. A website was created for the fest and all the schedules and updates were announced there for ease of the participants. The lectures and on spot quizzes were held on google meet, while other events were streamed on Instagram, Facebook, and YouTube accordingly.

Some glimpses from Geo-Aakarshan 2022



5. Live interaction by Lalit Arya (14th December 2022)

At the end of the academic year 2022-23, SPG-BHU was able to conduct its final event which was a successful live interaction on Ocean Bottom Seismometers (OBS) by Mr. Lalit Arya. Mr. Lalit Arya had enrolled in the Ph.D. program at National Taiwan University, Taiwan. His current research work involves the investigation of 35 OBSs deployed in the region of Northern Okinawa Trough (Southern Japan). He had also worked at CSIR NIO, as project associate. There he worked on harmonic noise, marine mammal noise, and hydro-acoustic waves recorded by the ocean bottom seismometers (OBSs) in the Andaman Sea. The live session was completed with lots of interesting queries and a Q&A session related to the topic. [G](#)

Some glimpses from the session

LIVE INTERACTION

Ocean Bottom Seismometry

He has done his M.Sc. (Tech) in Geophysics from Banaras Hindu University, Varanasi (2015-2018). He had done research work in the field of Site Amplification Characteristics using HVSR as his master's final year project. He had also worked at CSIR NIO, Goa as a project associate. There he worked on the harmonic noise, marine mammals' noise and hydro-acoustic waves recorded by the Ocean Bottom Seismometers (OBSs) in the Andaman Sea. He had enrolled in the PhD program at National Taiwan University, Taiwan. His current research work involves the investigation of 35 OBSs deployed in the region of Northern Okinawa Trough (Southern Japan). His areas of interest include the study of Hydroacoustic waves (T-phase), Microseism and Infra-Gravity waves.

LALIT ARYA
PhD, National Taiwan University, Taiwan, 2021-2024

VENUE:
ROOM NO. 5, DEPARTMENT OF GEOPHYSICS
BANARAS HINDU UNIVERSITY



A mud volcano in Baratang Island, Andaman, India. (Photo courtesy: Ritesh M. Joshi)

The analysis of the constitution of the gas reveals the following gases CH₄ [55.7 vol. %] followed by N₂ [32.2%], O₂ + Ar [9.9%], CO₂ [2.0%] and He [0.2%] at Baratang Island.

Reference: Vignesh, A, N. Ramanujam, Q. Rasool, and K. B. Swapan, 2016,
Geochemical Evidence for Provenance, Tectonic Settings and Presence of Gas Hydrate in Mud Volcano Sediments of Andaman Islands, Department of Disaster Management, Pondicherry University, Andaman Islands, *Oil and Gas Res.*, 2(1), 1-13, available at <https://www.omicsonline.org/open-access-pdfs/geochemical-evidence-for-provenance-tectonic-settings-and-presence-of-gas-hydrate-in-mud-volcano-sediments-of-andaman-islands-2472-0518-1000111.pdf>.