



**54th Annual Convention of
Indian Geophysical Union,
CSIR-NGRI, Hyderabad**
(3rd – 7th December 2017)

www.iguonline.in



... Welcome...

Venue:- CSIR-NGRI, Uppal Road, Hyderabad

Theme:- Recent Advances in Geophysics with Special Reference to Earthquake Seismology

December 03 (Sunday), 2017

Time	Event	Venue
14:00-15:30	Registration	Near S B Hall
15:30-16:45	Inauguration	S B Hall
16:45	Visit to Seismological & Airborne Geophysics LabHigh Tea....	

December 04 (Monday), 2017

Time	Event	Venue
08:00-09:00	Registration	Near S B Hall
09:00-11:00, Session:1	Plenary Talk	S B Hall
Chair:	Prof. Shailesh Nayak	
1	How lucky I am to be a Geophysicist	Harsh K. Gupta
2	Transdimensional Geophysical Inversion and Uncertainty Quantification.	Mrinal K. Sen
3	My Fifty Years of adventures measuring Gravity and Gravity Gradients at Sea, in Airplanes, and by Astronauts, on The Moon	Manik Talwani
4	International Seismological Centre (ISC): 50+ years of worldwide cooperation	Dmitry A. Storchak
11:00	Inauguration of Exhibition Stalls by	Prof. Harsh K. Gupta
11:00-11:25	Tea/ Coffee Break	
11:25-13:10, Session: 2	Oral Presentations	SB Hall
Chair:	Prof. Harsh K. Gupta	
11:25- 11:40, Talk:	by Decennial Awardee:	Anil Bhardwaj

Chair: Prof. Harsh K Gupta
Reservoir Triggered Seismicity

- 1 Co-Seismic gravity changes in the Koyna-Warna region: Implications of mass redistribution V.M. Tiwari
- 2 Ground electrical and electromagnetic studies in Koyna-Warna region, India B. P. K. Patro
- 3 Scientific drilling in the Koyna region, Deccan Traps, western India: completion of 3km-deep pilot borehole Sukanta Roy
- 4 Lineament Fabric from airborne LiDAR and its influence on triggered earthquakes in the Koyna-Warna region, Western India K. Arora
- 5 Long-term hydrochemical earthquake precursory studies at Koyna-Warna, India: Some vital observations D.V. Reddy

- 6 Case studies of Hydro Seismicity in Eastern Dharwar Craton D. Srinagesh

13:10-14:10 Lunch Break

14:10-16:30 Oral Presentations SB Hall

Chair: Dr. P.R. Reddy

14:10-14:30, **Invited Talk:** Deadly intraslab Mexican earthquake of 19 September 2017 (Mw 7.1). Was it unexpected and were the damage pattern in Mexico city abnormal? Shrikrishna Singh

14:30-16:30, **Session: 3A** Parallel Session SB Hall
Solid Earth Geoscience- Theoretical, Experimental & Exploration

Chair: Dr. P.R. Reddy & Dr. D. Sarkar

- 1 Microspherules from the Killariinfratrappeans, Deccan LIP, Maharashtra (India) G. Parthasarathy
- 2 Seismic Coda Decay in the Region of Kumaon Himalaya Atul Jhajhria
- 3 Scaling relations of moment magnitude, local magnitude, and duration magnitude for earthquakes originated in Shillong-Mikir plateau of northeast India Dipok K. Bora

- | | | |
|---|--|-----------------|
| 4 | Topography correction applied to magnetotelluric data from Sikkim Himalayas | Sushil Kumar |
| 5 | Improved Protocol and Techniques of Processing of Magnetic Measurements at CSIR-NGRI Magnetic Observatory | L. Manjula |
| 6 | Potential of Shale Gas in Cambay basin: Preliminary Study | AM Dayal |
| 7 | Mapping complex geology and tectonics for groundwater exploration in different geological terrains – A new experience | Dewashish Kumar |
| 8 | Geochemical and Geophysical Investigations on the QaratKibrit Salt Dome Faulting System South of Adam, Oman - In Search of Uranium Anomalies | N. Sundararajan |

14:45- 16:30, **Session: 3B**

Parallel Session
Oral Presentations
Young Researcher Program

E-Class Room
Main Building

Chair: Prof. V.P. Dimri & Prof. B.V.S. Murthy

- | | | |
|---|---|---------------------------|
| 1 | Crustal underplating and isostasy of two major aseismic Laxmi and Laccadive ridges of the eastern Arabian Sea | Akhil Mishra |
| 2 | Seismic Hazard Evaluation in Central Indo-Gangetic Plains | M.C. Raghucharan |
| 3 | Signatures of the Faizabad Ridge in the Central Ganga Basin from MT data along the Chitrakoot - Faizabad – Tulsipur profile | M. Demudu Babu |
| 4 | Meta-attributes for advanced interpretation of 3D seismic data from Taranaki basin off New Zealand | Priyadarshi Chinmoy Kumar |
| 5 | Conjugate Analysis of LANDSAT OLI and Satellite Gravity data for mapping structural controls and surface signatures of Gold mineralization in Bhukia, Rajasthan | Komal Rani |

6	Acoustic Reverse Time Migration over Structural Geology	Alok Kumar Routa
7	Characterization of Atmospheric Dust in relation with Land Use and Land Cover Change in Delhi	Kopal Verma
16:30-17:30	EC Meeting	Near SB Hall
16:30	Inauguration of Poster Session by	Prof. Mrinal K. Sen
16:30-18:30, Session: 4	Posters & Tea/Coffee	MB, Ground Floor
Chair:	Prof. M.K. Sen & Dr. O.P. Pandey	
18:30 -19:45	Cultural Program	Open Air Theatre
20:00	Dinner	Sports Complex

December 05 (Tuesday), 2017

9:00-10:15, Session: 5	IGU Award Lectures	SB Hall
Chair:	Prof. Shailesh Nayak	
Prof. Ramanathan Memorial Lecture		J. Srinivasan
Talk by Krishnan Medalist-1		Nimisha Vedanti
Talk by Krishnan Medalist-2		Devleena Mani
10:15-10:30, Invited Talk:	Geophysical Investigations Supporting Geological and Geotechnical Investigations for Earthquake Hazard Estimation	
		B.K. Rastogi
10:30- 11:00	Tea/Coffee Break	
11:00-13:00, Session: 6	Oral Presentations Airborne Geophysics	SB Hall
Chair:	Dr. D. Atchuta Rao	
Rapporteur:	Dr. (Ms.) M. Prashanti Lakshmi	
Invited Talks:		
1	50 years of Airborne Geophysics at CSIR-NGRI	Ajay Manglik
2	Indigenous Development and Establishment of Airborne Geophysical Survey Facility at NGRI	D. Atchuta Rao
3	Role of Heliborne Geophysical Surveys in Uranium Exploration in India	M.B. Verma

- | | | |
|---|---|---------------|
| 4 | Multisensor Aero-Geophysical surveys by GSI for Mineral Exploration | Dinesh Gupta |
| 5 | Heliborne Geophysical surveys for groundwater exploration in India | Shakeel Ahmed |
| 6 | Felicitation of past members of the Airborne Geophysics Group | |

13:00- 14:00

Lunch Break

14:00-16:20, **Session: 7A**

Parallel Session
Oral Presentations (SEG)
Internal Structure of the Earth

SB Hall

Chair: Dr. J.R. Kayal & Dr. O.P. Mishra

Invited Talk: Recent advances in Geotomography Dr. O.P. Mishra

- | | | |
|---|--|------------------|
| 1 | Seismic Tomography in Deccan Volcanic Province of Western India: Crust-Mantle Velocity Structure and Intraplate Seismicity | A.P. Singh |
| 2 | Are trapped fluids transported from deep crustal depths responsible for microseismic activity in the Kachchhintraplate region? | G. Pavan Kumar |
| 3 | New findings on intracratonic rifting of Indian shield during Gondwana period and possible geodynamical consequences | O. P. Pandey |
| 4 | Fluid driven earthquakes in the intraplate region of Kachchh, Northwestern (NW) India: An insight from local earthquake tomography | P. Mahesh |
| 5 | Tomographic Imaging of the Mahanadi delta for hydrocarbon exploration and crustal structure using deep seismic and Bouguer gravity data to understand its tectonic and geodynamic settings | Laxmidhar Behera |
| 6 | Impact of Noise Source Directionality on Crustal Velocity Structure from Ambient Noise Correlations | R. Rajesh |

- | | | |
|---|---|--------------------|
| 7 | New insights on the lithosphere structure and rift tectonics below northwest continental margin of India through constrained potential field modeling | M.
Radhakrishna |
| 8 | Regional magnetic surveys around Adikavi Nannaya University campus, Rajahmundry | K. V. Swamy |

14:00-16:20, **Session 7B**

Parallel Session
Oral Presentation
Marine Geosciences

E- Class Room
Main Building

Chair: Prof. M. Mukhopadhyay & Dr. K.S. Krishna

Invited Talk: Geophysical Modeling for the Giant Anticlines in the East Arabian Block, Saudi Arabia - A Scenario on Progressive Deformation of Crust

M. Mukhopadhyay

- | | | |
|---|---|------------------------------|
| 1 | Abiotic methane: A possible source for the formation of gas hydrates, in North-Eastern Indian Ocean (Bay of Bengal). | A.L.
Paropkari |
| 2 | Developing magnetic minerals as markers of evolution of natural gas hydrate system in Bay of Bengal | F. Badesab |
| 3 | Identification, distribution and geophysical characteristics of bathymetric highs off southwest coast of India | C.M. Bijesh |
| 4 | Crustal structure of the Gulf of Kutch, North-West India | D. Gopala
Rao |
| 5 | Importance of metal-speciation study in marine system | Parthasarathi
Chakraborty |
| 6 | Ocean State Forecasting and Services during extreme weather conditions: for saving life and property | R.
Harikumar |
| 7 | High Resolution Reconstruction Model for the Indian Ocean Plate Kinematics | V. Yatheesh |
| 8 | Nature of the ambient noise, site response and orientation of ocean bottom seismometers (OBSs): Scientific results of a passive seismic experiment in the Andaman Sea | Reddy R. |

16:20-16:40 Tea/Coffee Break

Chair: Prof. Shailesh Nayak

16:40-17:20, Session: 8 Special Lecture in Memory of Dr. J.G. Negi, Arun Bagpat

17:20-18:20 General Body Meeting SB Hall

December 06 , 2017

9:00-11:00, Session: 9 Oral Presentations, Seismology SB Hall

Chair: Dr. Sri Nagesh; Co-Chair: Dr. Prantik Mandal

- 1 The Gujarat Seismic Network - Status and Contributions M. Ravikumar
- 2 Broadband Seismology and new insights into the tectonics of the Koyna-Warna reservoir triggered seismic zone N.P.C. Rao
- 3 National Seismological Network: past, present and future V.K. Gahalaut
- 4 Seismotectonics of Northeast India: An appraisal J.R. Kayal
- 5 Felicitiation of Seismologists

11:00-11:30 Tea/Coffee Break

11:30-13:30, Session: 10A Parallel Session E Class Room
Oral Presentation Main Building
Solid Earth Geoscience- Exploration

Chair: Dr. R.K. Chadha & Prof. M. Radhakrishna

- 1 An Identification of Bayyaram Iron Ore Region from Magnetic Survey, Telangana State India B.Madhusudan Rao
- 2 Geophysical strategy for Manganese ore exploration in complex geological situation – Experience in Joda West Block, Jamda – Koira Belt, West Singhbhum Region Avadhesh K. Dubey
- 3 Geophysical Investigations for Basemetal Mineralization In Karoi–Rajpura Area, Bhilwara District, Rajasthan D.C. Naskar
- 4 Laboratory characterization of shale rock for assessing shale gas potential of Barakar and Barren Measures shale, Eastern India Piyush Sarkar

- | | | |
|---|--|----------------------|
| 5 | Geophysical Surveys for Gold Mineralisation in Honnamardi North Block, Chitradurga Schist Belt, Karnataka | V.
Ramamurthy |
| 6 | Electrical Resistivity Tomography for delineation of ground water bearing zones to prevent land slide in an open cast mine | S.N. Rai |
| 7 | Mapping of basement depth from gravity data: A machine learning approach | Saumen
Maiti |
| 8 | Assessment of groundwater quality in the Patancheruvu industrial development area in greater Hyderabad, Telangana State | Atulya K.
Mohanty |

11:30-13:35, **Session: 10B** Parallel Session
 Oral Presentation
 Geosciences- Marine, Atmosphere and
 Planetary & Solid Earth
 SB Hall

Chair: Dr. Balesh Kumar & Dr. Rajiv Nigam

Invited Talk: Challenges for Carbon dioxide Mitigation: India's Perspective towards Climate Justice
 Balesh
 Kumar

- | | | |
|---|--|-----------------------------|
| 1 | Harappan Port Town of Dholavira (Gujarat) impacted by Tsunami: evidences from Ground Penetrating Radar (GPR), faunal (Foraminifera) and archaeological (pottery) studies | R. Nigam |
| 2 | River metamorphosis and evaluation of temporal terrain changes of Chalakudy river basin using geospatial technology | Anish A.U. |
| 3 | Ductile behavior of high grade gneisses along Palghat-Cauvery Shear Zone: Gondwana Correlations | D.P.
Mohanty |
| 4 | Pre-, Syn- and Post India-Asia collisional granitoidmagmatism in the SE Karakoram, India: Implications on Palaeogeography, Subduction and Transpression Tectonics | Shailendra
Pundir |
| 5 | High resolution seafloor mapping using side scan sonar near Kalingapatnam coast, Andhra Pradesh, Bay of Bengal | S. Balasingh
John Samuel |

6 Changes in Indian Ocean Dipole's Influence on Antarctica in the recent decade. M. Nuncio

7 Recent seismo-tectonic activities on Mars: A geological assessment P. Senthil Kumar

8 Separation of thin reservoir facies in Carbonate Reservoir through Genetic Inversion Saurabh Datta Gupta

13:35 - 14:30 Lunch Break

14:30-16:30, **Session 11A** Parallel Session SB Hall

Oral Presentations

Solid Earth Geoscience- Disaster Management

Chair: Prof. A.B. Roy & Prof. N. Sundararajan

1 Palaeoseismicity: Historical, Archaeological & Geological Evidence of Past Earthquakes A.B. Roy

2 A probable model for the uninterrupted occurrences of earthquakes in the rupture zone of the 2001 Bhuj earthquake for last 16 years Prantik Mandal

3 Soil classification and V_{S30} mapping for seismic site effect estimation in Gujarat region, Western India B. Sairam

4 Low deformation rates in the Koyna-Warna region from a decade of GPS measurements Catherine J.K.

5 Earthquake early warning system by IOT D.V.Ramana

6 Estimation of Site Response by Spectral Analysis in an Earthquake Prone Region - A Case Study N. Sundararajan

7 Probabilistic assessment of Earthquake Hazard in North East India and adjoining regions R.B.S. Yadav

8 Human Induced Seismicity – Lessons to learn in India S. Kareemunni sa Begum

14:30-16:30, **Session 11B** Parallel Session E Class Room,
Oral Presentation Main Building
Atmosphere and Planetary Sciences

Chair: Dr. R.K. Tiwari & Prof. B. Madhusudan Rao

1	Assessment of Urban pollution from heavy metals concentration in road dust in Greater Hyderabad Municipal Corporation (GHMC), Telangana State, India.	B. Madhusudan Rao
2	Storm time disturbance electric fields over Indian longitudes	Jayashree B.
3	Last glacial-interglacial dynamics of the Indian summer monsoon	Mahjoor Ahmad Lone
4	Accelerating water cycle and cloudbursts in the Central-Western Himalaya	Nilendu Singh
5	Observation of Lithosphere-Atmosphere-Ionosphere Variability during Japan Earthquakes	S.Choudhary
6	Thermospheric Nightglow response to Penetrating Electric Field over the Dip Equator: A Case Study	Ajesh A.
7	Characteristics of Equatorial Electrojet and Counter Electrojet phenomena at different spatial scale length from the Indian sector	R.K Archana
8	Impact spallation processes on Mars: A case study from Winslow crater	N. Krishna.
17:00-18:00	54th IAGU Concluding Session	SB Hall
18:00	Tea/Coffee	

Overview7

S. No.	Time	Presenting Author	Presentation
1	09:00–09:10	Dr. V.M. Tiwari Director, CSIR-NGRI and VP-IGU	<i>Welcoming Remarks</i>
2	09:10–09:20	Dr. Craig Schiffries Director, DCO, Geophysical Laboratory, Carnegie Institution of Science, Washington, USA	<i>Transformational Opportunities in Science and Technology</i>
Session 1: Extreme Physics & Chemistry – Reservoirs & Fluxes			
S. No.	Time	Presenting Author	Title of the Paper
1	09:20–09:40	Prof. Murli Manghnani University of Hawaii	<i>Introduction to the DCO Extreme Physics and Chemistry Community</i>
2	09:40–10:00	Dr. EVSSK. Babu CSIR-NGRI	<i>Kimberlites and carbon from Deep Earth</i>
3	10:00–10:20	Dr. Sujoy K. Ghosh IIT, Kharagpur	<i>Carbonated magmas in Earth's mantle</i>
4	10:20–10:45	Dr. Brendan McCormick University of Cambridge, UK	<i>Introduction to the DCO Reservoirs and Fluxes Community</i>
Coffee/Tea Break: 10:45 – 11:00 Hrs			
Session 2: Deep Energy & Deep Life			
S. No.	Time	Presenting Author	Title of the Paper
1	11:00–11:25	Dr. Craig Schiffries Director, DCO	<i>Introduction to the DCO Energy Community</i>
2	11:25–11:45	Prof. V.P. Dimri Distinguished Scientist, CSIR-NGRI	<i>Carbon Sequestration and Enhanced Oil Recovery</i>
3	11:45–12:05	Dr. Vikram Vishal IIT, Mumbai, Powai	<i>Multiphase CO₂ Behavior in Deep Carbon Sinks</i>
4	12:05–12:30	Prof. Tom Kieft New Mexico Tech	<i>Introduction to the DCO Deep Life Community</i>
5	12:30–12:50	Dr. Pinaki Sar IIT, Kharagpur	<i>Microbial life in deep, dark continental crust underneath the Deccan traps</i>
6	12:50–13:10	Dr. Sukanta Roy Project Director, BGRL, MoES	<i>Koyna Scientific Drilling Project</i>
Panel Discussion & Concluding Remarks			
1	13:10–13:30	Dr. V.M. Tiwari, Dr. Craig Schiffries, Prof. Tom Kieft and Prof. Murli Manghnani	