

GeoMandu – An NGS International Conference Series

“Geo-hazards and Geo-Infra Disasters”

16-17 March 2023 Kathmandu (Hotel Radisson)

Day 1: 16 March 2023 (Thursday)

Opening Session (09:00-10:30)

(Hall: Nepa Dhuku)

Chief Guest: Hon’ble Mr. Narayan Kaji Shrestha, the Deputy Prime Minister of Nepal

Master of Ceremony: Er. Kalpana Adhikari, Secretary, Nepal Geotechnical Society

Keynote Presentation I (11:00-11:45)

(Hall: Nepa Dhuku)

Time	Topic / Presenter	Session Chair/Co-chair
11:00	Keynote Presentation I - Prof. Keh-Jian. Shou, Vice President – Asia, ISSMGE (Professor: National Chung Hsing University, Taiwan) <i>Topic of presentation: “On the Landslide Hazard with the Impact of Climate Change in Taiwan”</i>	Chair: <i>Prof. Dr. Netra P. Bhandary</i> Co-Chair: <i>Dr. Mandip Subedi</i>

Invited Presentation Session I (11:50-13:10)

(Hall: Nepa Dhuku)

Session Chair: *Prof. Dr. Netra P. Bhandary*

Session Co-Chair: *Dr. Mandip Subedi*

Time	Topic	Presenter
11:50	Recent Development of Geotechnical Engineering in Srilanka	<i>Er. KLS Sahabandu, President, Sri Lankan Geotechnical Society</i>
12:10	Case studies on shoring system behavior during deep excavation	<i>Dr. Anil Joseph, President, Indian Geotechnical Society</i>
12:30	NDRRMA and its efforts towards disaster mitigation in Nepal	<i>Er. Anil Pokhrel (CEO, NDRRMA)</i>
12:50	Corporate Presentation by Terre Armee	<i>Terre Armee</i>
13:10	Lunch	<i>Until 14:10</i>

Invited Presentation Session II (14:10-15:20)

(Hall: Nepa Dhuku)

Session Chair: *Er. Tuk Lal Adhikari*

Session Co-Chair: *A/Prof. Dr. Indra P. Acharya*

Time	Topic	Presenter
14:20	Escalating Road Infrastructure Vulnerability in Nepal due to Climate Change Effects	<i>Er. Prabhat Kumar Jha (Department of Roads, Nepal)</i>
14:40	A methodology for Road Cutting design guidelines	<i>Dr. Ellen Robson (Durham University, UK and Newcastle University, UK), Andrea Agosti, Stefano Utili and David Milledge (Newcastle University, UK)</i>

15:00	Understanding Complex Cascading and Compounding impacts of Natural Hazards	<i>Dr. Bhesh Raj Thapa (Universal Engineering and Science College, PU, Nepal) and Dr. Rocky Talchabhadel (Texas A&M AgriLife Research, Texas A&M University, USA)</i>
15:20	Real-time Monitoring of Active Landslide in Kalimpong, Darjeeling Himalayas	<i>Prof. Dr. Neelima Satyam (Indian Institute of Technology, Indore, India)</i>
15:40	Tea/Coffee Break	<i>Until 16:10</i>

General Presentation Session I (16:10-18:00)

(Hall: Nepa A)

<i>Parallel Session: Slope study and design</i>		Session Chair: <i>Dr. Amod Mani Dixit</i> Session Co-Chair: <i>Dr. Bhim K. Dahal</i>
Time	Presentation Title	Presenter/Authors
16:05	Rockfall Hazard Mitigation Along Main Approach Road of Z-Morh Tunnel, Jammu and Kashmir, India	<i>Prakash Ravindaran, Deepak Manjunath and Saikat Chatterjee (Terre Armee India)</i>
16:20	A Tale of Sacrificial Reinforced Soil Wall from the Penstock Alignment Slope of Middle Tamor Hydropower Project, Taplejung	<i>Manab Rijal, Basu Dev Pokhrel, Manoj Adhikari (Maccaferri Nepal) and Aarakhshya Kandel (Sanima Hydro and Engineering Pvt. Ltd.)</i>
16:35	Restoration of River Bank and Prevention of Further Soil Erosion using TechRevetment at Dikchu, North Sikkim, India	<i>Hirak Dutta, Sunip Barman and Prasanna Gangaler (Terre Armee, India)</i>
16:50	Case Study: Landslide Mitigation Measures at Narendranagar Landslide Uttarakhand, India	<i>Gourango Singha, Saurabh Chaurasiya, Harish Madupuri (Techfab India)</i>
17:05	Landslide Susceptibility Map of Uwajima (Japan) produced with machine learning technique and XRAIN radar acquired rainfall data	<i>Dos Santos Rodrigues (PhD Candidate, Ehime University, Japan) (Online)</i>
17:20	Study of the Slope Failures in Kanti Highway along Lesser Himalayan Range	<i>Suresh Neupane (Department of Roads, Nepal)</i>
17:45	Closing of Day 1	

General Presentation Session II (16:00-18:00)

(Hall: Nepa B)

<i>Parallel Session: General Research</i>		Chair: <i>Dr. Mohan P. Acharya</i> Co-Chair: <i>Dr. Santosh K. Yadav</i>
Time	Presentation Title	Presenter/Authors
16:05	Effect of forest on debris flows	<i>Sandeep Shrestha, Prof. Rao Martand Singh, Prof. Vikas Thakur (Norwegian University of Science and Technology - NTNU, Trondheim, Norway)</i>
16:20	Understanding the dynamics of Chure River Systems: Implications for Integrated Management of Watersheds and Fluvial Disasters	<i>Dr. Saroj Karki (Ministry of Water-Supply, Irrigation and Energy, Nepal), Dr. Bhesh Raj Thapa (Universal College of Engineering and Management, Nepal), Sanjay Giri (Royal Haskoning, Netherlands), Nagendra Kayastha (Independent Specialists, Netherlands) and Keshab Sharma (BGC Engineering Inc., Canada)</i>
16:35	Strength Behaviour And Fracture Propagation In UngROUTED And Grouted Porous Rock Mass Subjected To Uniaxial Loading	<i>Gaurav Kumar Mathur (IIT, Patna, India), Arvind Kumar Jha (IIT, Patna, India) and Gaurav Tiwari (IIT, Kanpur)</i>

16:50	Strength variation in rock sample tests of Central Himalayan Region	(Online) Ananda Gupta (Lincon University, Malaysia) and Dr. Suman Panthee (Tribhuvan University, Nepal)
17:05	Analysis the effect of non-persistent rock joint with various rock bridge intensity and configuration on shear behavior using direct shear test on PFC3D	Gaurab Singh Thapa (National Central University, Taiwan)
17:20	Design of Tunnel Support System, Shotcrete versus Rock Bolts in Middle Modi Hydroelectric Project (MMoHP)	Milan Poudel (Water Resources and Irrigation Development, Nepal), Prof. Dr. Akal Bahadur Singh (IoE, Tribhuvan University, Nepal) and Mohan Raj Panta (Peoples Energy Pvt. Ltd.)
17:45	Closing of Day 1	

Day 2: 17 March 2023 (Friday)

(Registration begins from 8:30)

General Presentation Session III (09:00-:11:15)

(Hall: Nepa A)

<i>Parallel Session: Case Studies and Monitoring</i>		Session Chair: A/Prof. Dr. Indra P. Acharya Session Co-Chair: Dr. Dhundi Raj Pathak
Time	Presentation Title	Presenter/Authors
9:00	Effects of riverbed degradation and sediment flow in sustainability of headworks of irrigation projects in Jhapa, its effects, causes and issues.	Krishna Prasad Rajbanshi (Water Resource and Irrigation Development Division, Jhapa)
9:15	Geo-disaster in Nepal Himalaya with some case examples	Dr. Narayan Gurung (Kadoorie Agricultural Aid Association, Nepal), Monique Fort (Universite de Paris, France), Gilles Arnaud Fassetta and Rainer Bell (Department of Geography, University of Bonn, Germany)
9:30	GIS-based MCDA–AHP modelling for avalanche susceptibility mapping of Sagarmatha National Park in Nepal	Madan Pokhrel (IoE, Tribhuvan University, Nepal)
9:45	Sediment Quantification of the Andheri Khola Sub-Watershed of Fewa Lake in Nepal and the Socio-economic Impact of Climate Change	Naba Raj Sharma (Senior Divisional Engineer, Government of Nepal), Milan Bhattra (Watershed Management Center, Government of Nepal), Bikash Devkota (PhD. Candidate, University of South Australia, Australia), Arjun Baniya (United Technical College, Nepal) and Mahendra Baniya (Senior Divisional Engineer, Government of Nepal)
10:00	Rainfall Thresholds for Shallow Landslides in Kavre District and Sediment Dynamics of Roshi River, Nepal	Suman Shrestha, Prachand Man Pradhan (Kathmandu University, Nepal) and Hari Krishna Shrestha (Nepal Engineering College, Nepal)
10:15	Why can't we use dry granular flow model to design spacing between barriers in mitigating debris flows?	Aastha Bhatta and Charles Wang Wai Ng (The Hong Kong University of Science and Technology, Hong Kong SAR, China) (Online)

10:30	Physical modelling of debris flow – flexible barrier interaction: impact force reduction using novel brake elements	<i>Sunil Poudyal and Charles Wang Wai Ng (The Hong Kong University of Science and Technology, Hong Kong SAR, China) (Online)</i>
10:45	Tea and Coffee Break	Until 11:15

General Presentation Session IV (09:00-:11:15)

(Hall: Nepa B)

Parallel Session: General Ground hazard and design

Session Chair: *Dr. Bishwa Ranjan Shahi*
Session Co-Chair: *Dr. Narayan Gurung*

Time	Presentation Title	Presenter/Authors
9:00	Pile Tests in Nepal – Current Practice and Enhancements	<i>Arun Pandit, Ananda Gupta (NS Engineering, Nepal)</i>
9:15	Evaluating the Performance of a Composite Well-Pile Foundation for a Bridge in Nepal: A Case Study	<i>Jibendra Misra and Prof. Dr. Netra Prakash Bhandary (Ehime University, Japan)</i>
9:30	Evaluation of Constitutive Soil Models for Analysis of Deep Excavation in Kathmandu Clay	<i>Sandip Regmi and Dr. Bhim Kumar Dahal (Institute of Engineering, Tribhuvan University, Nepal)</i>
9:45	Correlation of California Bearing Ratio with Dynamic Cone Penetration Index and Index Properties of Sub-Grade Soil Basantapur – Padam Road	<i>Bharat Bahadur Dhakal and Dr. Bhim Kumar Dahal (Institute of Engineering, Tribhuvan University, Nepal)</i>
10:00	Study of Behaviour of Composite Caisson-Pile Foundation (CCPF) based on experimental and numerical analysis	<i>Rajan KC (Geo-Infra Research Institute, Nepal), A/Prof. Dr. Indra Prasad Acharya (IoE, Tribhuvan University, Nepal), Prof. Dr. Prishati Raychowdhury (IIT Kanpur, India) and Dr. Keshab Sharma (BGC Engineering Inc., Canada)</i>
10:15	Effect of Curing Period on Unconfined Compressive Strength of Cement Treated Soil	<i>Ujjwal Niroula (Everest Engineering College, Pokhara University, Nepal) and Dr. Bhim Kumar Dahal (IoE, Tribhuvan University, Nepal)</i>
10:30	Unified Framework for Slope Stability Prediction using Machine Learning Algorithm and Multiple Linear Regression	<i>Milan Aryal, A/Prof. Dr. Indra Prasad Acharya and Rajan KC (IoE, Tribhuvan University, Nepal)</i>
10:45	Tea and Coffee Break	Until 11:15

Special Presentation Session (11:15: 13:00)

(Hall: Nepa Dhuku)

Session Chair: *Prof. Dr. Neelima Satyam*
Session Co-Chair: *Dr. Narayan P. Marasini*

Time	Presentation Title	Presenter/Authors
11:20	Effect of soil strata on peak characteristics of H/V spectra of the ground ambient vibration: A case of Kathmandu Valley ground	<i>Prof. Dr. Netra Prakash Bhandary (Ehime University, Japan), Dr. Youb Raj Paudyal</i>
11:40	Slope Stability analysis of waste dump in Sisdol, Nepal for post closure plan and sustainable utilization of land	<i>Dr. Dhundi Raj Pathak (Engineering Study and Research Centre, Nepal) and Manab Rijal (Maccaferri (Nepal) Pvt. Ltd., Nepal)</i>

12:00	Geotechnical Challenges in the Foundation Design of Mechi Bridge	<i>Dr. A.P. Singh (Honorary Secretary, Indian Geotechnical Society)</i>
12:20	Liquefaction hazard and urban settlement of Kathmandu	<i>Dr. Mandip Subedi (VP, Nepal Geotechnical Society) and Ar. Apil KC (General Secretary, Society of Nepalese Architects)</i>
12:40	Development of a digital monitoring device for smart rockfall barriers	<i>Dennis Gross, Manuel Eicher and Helene Lanter (Geobrugg AG, Romanshorn, Switzerland)</i>
13:00	Lunch	(Until 14:00)

Keynote Presentation II (14:00-14:45)

(Hall: Nepa Dhuku)

Time	Topic / Lecturer	Session Chair/Co-chair
14:00	Keynote Presentation II - Dr. Lukas Arenson, BGC Engineering Inc., Canada <i>Topic of Presentation:</i> "Geohazards in Mountain Environments in Response to a Rapidly Changing Cryosphere and the Role of Geotechnical Engineering"	Session Chair: <i>Prof. Dr. Netra P. Bhandary</i> Session Co-chair: <i>Dr. Mohan P. Acharya</i>

Invited Presentation Session III (14:45-16:15)

(Hall: Nepa Dhuku)

Session Chair: *Dr. A.P. Singh (Hon. Secretary, IGS)*
Session Co-Chair: *Dr. Mohan P. Acharya*

Time	Topic	Lecturer
14:50	Steep Creek Geohazards and the 2021 Flood Events on the Melamchi River	<i>Hamish Weatherly (BGC Engineering Inc., Canada)</i>
15:20	Ground Response and Liquefaction Analysis of Kathmandu City Based on 2015 Nepal Earthquake Data	<i>Pradeep Acharya (Politecnico di Milano, Italy), Shiv Shankar Kumar (National Institute of Technology Patna, India), Pradeep Kumar Dammala (IIT Jodhpur, India) and Murali Krishna Adapa (IIT Tirupati, India)</i>
15:40	Distress and Susceptible Behaviour of Calcium Based Stabilized Soils due to Sulphate Contamination	<i>Dr. Arvind Kumar Jha and Avadesh Kumar (IIT Patna, India) (Online)</i>

Closing Session (16:00-18:00)

(Hall: Nepa Dhuku)

Chief Guest: Prof. Dr. Shashidhar Ram Joshi, Dean, Institute of Engineering, TU

Master of Ceremony: Er. Rajan KC, Youth Coordinator, Nepal Geotechnical Society

Closing Dinner (until 21:30)

(Hall: Nepa Dhuku)

Interactive Dinner with Nepali Cultural Program/show

Poster Presentations:

The poster presentation is proposed during lunch and break sessions.

SN	Topic	Presentor/Authors
1	Engineering geological and geochemical investigation of black clay deposit of Dang Valley, Lumbini Province, Nepal	<i>Madan Oli, Adesh Atreya, Manoj Thapa and Megh Raj Dhital (Trichandra Multiple Campus, Tribhuvan University, Nepal)</i>
2	Geotechnical Investigation: A slope stability assessment of Pathibhara Cable Car Project	<i>Sandeep Shrestha (Akara Material Testing, Nepal) and Sulabh Majgainya (Tribhuvan University, Nepal)</i>
3	Rainfall triggered landslides and roadblock locations in Sindupalchowk district of Nepal	<i>Unisha Ghimire (Khowpa College of Engineering, Tribhuvan Univeristy) and Kaushal Gnyawali (Himalayan Risk Research Institute, Nepal)</i>
4	Design of composite well pile foundation (CWPF): a case study of bridge foundation in Nepal	<i>Jibendra Misra, Prof. Dr. Netra P. Bhandary (Ehime University, Japan), Mandip Subedi (IoE, TU), Keshab Sharma (BGC Engineering Inc., Canada)</i>
5	Slope Stability Analysis of a Vertical Cut: a Case Study of Sarangkot Housing, Sarangkot, Pokhara	<i>Aayush Adhikari, Bigyan Bhandari (IoE, Tribhuvan University, Nepal) and Anup Lamichhane (Advanced College of Engineering and Management, Tribhuvan University, Nepal)</i>
6	Liquefaction Hazard Mapping of Kathmandu Valley	<i>Mandip Subedi, Rajan KC, Indra Prasad Acharya (IoE, Tribhuvan University, Nepal)</i>
7	Geo-Hazard: its causes and recommendation: Case study of Karnali Province	<i>Baldeep Sharma, Sushil Kumar Shrestha, Pawan Babu Bastola and Harish Paneru (NDRRMA, Government of Nepal)</i>
8	An Experimental Study on Performance of Composite Caisson-Pile Foundation (CCPF) under Static Vertical Loading	<i>Rajan KC (Geo-Infra Research Institute, Nepal), A/Prof. Dr. Indra Prasad Acharya (IoE, Tribhuvan University, Nepal), Prof. Dr. Prishati Raychowdhury (IIT Kanpur, India) and Dr. Keshab Sharma (BGC Engineering Inc., Canada)</i>
9	Numerical study on the performance of shallow foundation on liquefiable soil during an earthquake	<i>Abinash Aryal (Department of Roads, Nepal), Dr. Santosh Kumar Yadav (IoE, Tribhuvan University, Nepal) and Pawan Babu Bastola (NDRRMA, Nepal)</i>