

Hands-on-Training Programme on
**Mastering Rock Slope Design and
Analysis with Advanced Geotechnical
Software Tools from Rocscience**

Date : 2nd - 3rd September 2025 (Tuesday & Wednesday)

Venue: CBIP, Malcha Marg, Chankyapuri New Delhi



Organized by



Central Board of Irrigation & Power



ISRM (India)

in Association with



INTRODUCTION

Rock slopes — whether natural hillsides, cuttings, or open-pit walls — pose significant stability challenges, especially in varied geological settings. Accurate assessment and design are crucial for ensuring safety, optimising excavation, and mitigating hazards such as rockfalls or wedge failures.

This two-day Hands-on Training Programme aims to provide civil and geotechnical engineers, mining professionals, and researchers with practical skills in rock slope design and analysis using advanced software tools from Rocscience. The programme combines theoretical fundamentals with real-world case-based learning and interactive software training.

Led by a seasoned industry expert, the sessions will empower participants to confidently use tools like Dips, Slide2, Slide3, RocSlope2, RocSlope3, RocFall2, RocFall3, RS2, RS3, and RSData to model, analyse, and interpret slope stability scenarios across 2D and 3D environments.

KEY HIGHLIGHTS

- Hands-on software training with real-world examples from slopes and open-pit excavations.
- Step-by-step guidance on both 2D and 3D slope stability analyses, including limit equilibrium and FEM-based modelling.
- Rockfall simulation and mitigation planning using RocFall tools.
- Integrated data analysis using RSData and advanced interpretation techniques.
- Interactive tutorials led by an expert with decades of practical and teaching experience.

WHO SHOULD ATTEND?

This programme is tailored for:

- Geotechnical, civil and mining engineers involved in slope design, mining, or infrastructure development.
- Engineering geologists assessing rock mass behaviour in slope settings.
- Researchers and faculty in rock mechanics and geotechnical engineering.
- Professionals seeking to enhance their software-based analysis skills in slope stability.

SOFTWARE OVERVIEW

This training programme will provide hands-on experience with the following Rocscience software tools, tailored to slope stability analysis:

1. **Dips** : A stereographic projection tool used for analysing orientation data to evaluate kinematic stability and potential structurally-controlled failure modes in rock slopes.
2. **RocSlope2** : A specialized tool for 2D slope stability analysis using the limit equilibrium method, ideal for assessing planar, wedge, and toppling failures.
3. **RocSlope3** : A powerful 3D limit equilibrium software designed for assessing the factors of safety of thousands of blocks in highly jointed rock masses, where failures are structurally controlled.
4. **RocFall2** : A 2D rockfall trajectory simulation tool that evaluates the impact of falling rocks and assists in designing mitigation measures.
5. **RocFall3** : A 3D extension of RocFall2 for simulating rockfall paths and impacts in large-scale open-pit mining scenarios.
6. **Slide2** : A comprehensive 2D limit equilibrium software for modelling and analysing slope stability, groundwater, and reinforcement systems.
7. **Slide3** : A 3D slope stability analysis tool that enables detailed modelling of complex geometries, material properties, and failure mechanisms.
8. **RS2** : A 2D finite element software for stress-deformation analysis, particularly suited for evaluating stability in weak rock formations and designing support systems.
9. **RS3** : A complete 3D finite element package for geotechnical analysis, offering advanced modelling capabilities for complex slopes and geological conditions.
10. **RSData** : A data analysis tool for interpreting rock and soil strength parameters, generating strength envelopes for input into slope stability models.
11. **RSLog** : A geological data management tool for visualizing borehole data and integrating geotechnical information into slope design workflows.

TENTATIVE SCHEDULE

Day 1 : Morning Session:

- Fundamentals of Rock Slope Design
 - Introduction
 - Approach to Slope Design in Moderate to Strong Rocks
 - Approach Slope Design in Moderate to Weak Rocks
- Stereonets and their use in kinematic analysis of rock slopes
- Overview of various software tools for slope stability analysis:
 - Stability controlled by structure: LEM based software for structurally controlled stability in rock – Dips, RocSlope2 and RocSlope3
 - Stability controlled by strength:
 - LEM based software for strength-controlled stability in soil and rock: Slide2 and Slide3
 - FEM based software for strength-controlled stability in soil and rock: RS2 and RS3

- o Evaluating rockfall hazards and designing mitigation measures: RocFall2 and RocFall3
- o Strength and stress analysis of rock and soil: RSData
- o Streamlining collecting, reviewing, and preparing borehole logs: RSLog

Afternoon Session:

- Kinematic Analysis using Dips
- 2D slope stability analysis for planar, wedge and toppling failures using RocSlope2
- Hands-on with RocSlope3: Building 3D models, conducting block stability analysis, and designing slope stabilisation measures.

Day 2 : Morning Session:

- 2D Limit Equilibrium slope stability analysis using Slide2
- 3D Limit Equilibrium slope stability analysis using Slide3
- 2D FEM slope stability analysis using RS2
- Comprehensive 3D FEM slope stability analysis using RS3

Afternoon Session:

- Assessing Rockfall hazards in 2D and designing barriers using RocFall2
- Advanced 3D rockfall simulation with RocFall3
- Analysing rock and soil strength data and determining strength envelope parameters with RSData
- Understanding borehole log management with RSLog.

DATES & VENUE

The date for the event is 2nd - 3rd Sept. 2025 (Tuesday & Wednesday) at CBIP Hall, (1st Floor), Malcha Marg, Chanakyapuri, New Delhi

OFFICIAL LANGUAGE

The official language for the event is English.

REGISTRATION FEE*

- The registration fee for participation is Rs.12,000/- per participant.
- There would be discounted fee of Rs.10,000/- per participant, applicable for Members of CBIP, ISRM & TAI
- 50% discount in the fee will be applicable for Young Participants (upto 35 years of age)

*GST 18% will be charged extra on Registration fee.

The registration fee includes registration kit, working lunch, tea/ coffee during the event only. The participants will have to make their own arrangement for boarding and lodging, transport, etc.

- The registration fee includes temporary licenses (full version) of these software for 15 days
- The participants must bring their laptops.

Spot registration facility will also be available provided prior Information is received.

PAYMENTS

The payment related to the event is to be remitted either through cheque in favour of ISRM or through bank transfer to the following account:

Name of Bank : Canara Bank Address : Delhi Diplomatic Enclave, 7/48, Malcha Marg, Chanakyapuri, New Delhi 21

Account No. : 0157101031512, MICR Code No. 110015007 Account Holder's Name THE COMMITTEE OF THE ISRM

IFSC Code CNRB0000157, Swift Code CNRBINBBDFS

Bank charges if any, must be borne by the participants and should not be deducted from the amount remitted.

Once the payment is done, please share the screen shot along with registration form.

OPPORTUNITIES FOR SPONSORSHIP

Scope exists for organizations to be the Sponsor on lump sum payment with following attendant benefits:

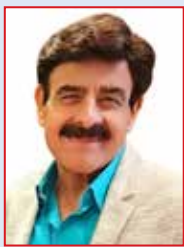
Platinum Sponsor : Rs. 3,00,000/-	Gold Sponsor : Rs. 2,00,000/-	Silver sponsor : Rs. 1,00,000/-
<ul style="list-style-type: none"> • 10 delegate passes for participation • Company logo on main banner • Announcement - Thanking sponsor • Circulation of Company Literature • Speaking Opportunity • Complimentary Advertisement in the Key Journal Published immediately after the event covering report of the event • Special Invite to the head of organization. 	<ul style="list-style-type: none"> • 05 delegate passes for participation • Company logo on main banner • Announcement -Thanking sponsor • Circulation of Company Literature • Speaking Opportunity • Complimentary Advertisement in the Key Journal Published immediately after the event covering report of the event 	<ul style="list-style-type: none"> • 03 delegate passes for participation • Company logo on main Banner • Announcement - Thanking sponsor • Circulation of Company Literature

OPPORTUNITIES FOR TABLE TOP DISPLAY

Limited Slots are available @ Rs. 50,000/- Plus GST, for display of products, services & Innovations.



TRAINING PROGRAMME INSTRUCTOR



Dr Manoj Verman is a leading expert in rock engineering with decades of experience in slope stability, tunnelling, and underground excavation. A former Vice President of ISRM and Past President of the Indian National Group of ISRM, he now serves on ISRM's International Advisory Forum.

Widely recognised for his long-standing contributions to the tunnelling industry, Dr Verman is often referred to as "*The Tunnel Man of India*". This informal title reflects his enduring commitment to knowledge sharing — through professional courses, thought leadership, and by founding platforms such as TunnelFem, TunnelTech, and Tunnel Times India — the country's first magazine dedicated to tunnelling and underground construction.

As a consultant and trainer, he has supported numerous high-impact infrastructure projects and has championed the use of advanced geotechnical software in tunnelling and slope design.

Dr Verman's engaging teaching style, combined with his practical insights and extensive technical knowledge, ensures that participants leave with valuable skills and actionable insights to excel in their geotechnical careers.

REGISTRATION FORM

1. Name _____
(First Name) (Middle Name) (Surname)
2. Position _____
3. Organization _____
Address _____
5. City _____ PIN _____
6. Mobile No. _____
7. E-mail ID _____
8. Bank Draft No./ Online Bank Transaction ID _____ dated _____
_____ for Rs. _____ is enclosed.
9. I intend to participate in the deliberations of the event.

(Signature)

Place: _____

Date : _____

SECRETARIAT

All correspondence relating to the event should be addressed to:

Shri A.K. Dinkar, Secretary, CBIP & Member Secretary, ISRM

Shri K.K. Singh, Director (WR), CBIP and Treasurer, ISRM, E-mail: kksingh@cbip.org

C/o CBIP, Plot No. 4, Institutional Area, Malcha Marg, Chanakyapuri, New Delhi-110 021

Phone: 91-11-26115984 / 26116567; Fax: 91-11-26116347, Website: www.cbip.org

Contact Person: Shri Vishan Dutt, Adviser, CBIP, M: 9811431554, E-mail: vishandutt@cbip.org

Ms. Meenakshi, CBIP Secretariat, Ext. 116:, E-mail: meenakshi@cbip.org