1. Name & Address **Dr. MAHENDRA SINGH**
Professor, Geotechnical Engineering
Department of Civil Engineering
IIT Roorkee, Roorkee- 247667, UA, INDIA
Phone: +91(1332) 285651 (O), 285006® (M) 94120-70268
Email: singhfce@iitr.ernet.in

2. Date of Birth: 12th January, 1960

3. EDUCATIONAL QUALIFICATIONS:

Examination/ Degree	Year	Discipline	University/ College	Marks/ Grade & Division
PhD*	1997	Geotechnical Engg. (Rock Mechanics)	IIT Delhi, India	10/10 (Division not awarded)
M.Tech**	1985	Water Resources Engg. (Ground Water)	IIT Kanpur, India	8.62/10 (Division not awarded)
BE (Civil)	1983	Civil Engineering	M.N.R. Engg. College, Allahabad.	77.8 %, Ist Division with Honours.

4. MAJOR AREAS OF RESEARCH INTEREST:

i. Strength and deformational behaviour of jointed rock masses;
ii. Stability of Rock and Soil Slopes;
iii. Stability analysis of underground openings.

5. MAJOR SUBJECTS TAUGHT

A. Geotechnnical Engineering stream

i. Design of Underground Excavations
ii. Engineering Behaviour of Rocks and Rock Masses
ii. Rock Slope Engineering
iii. Soil Mechanics
iv. Foundation Engineering

B. Water Resources Stream

i. Water Resources Engineering
ii. Irrigation and Hydraulic Design
iii. Dam Design
iv. Ground Water Hydrology

C. General Civil Engineering

i. Engineering Graphics (Geometrical Drawing)
ii. Principles of Surveying
iii. Engineering Surveys

6. PROFESSIONAL EXPERIENCE:

i. **Professor,** Deptt. of Civil Engg., IIT Roorkee, Dec 2007 to till date

ii. **Associate Professor,** Deptt. of Civil Engg., IIT Roorkee,April 2001 to Dec 2007.

iii. **Reader**, Civil Engg. Deptt, M.N.R. Engg. College, Allahabad India, March-96 to April 2001;

ii. **Senior Lecturer** Civil Engg. Deptt, M.N.R. Engg. College, Allahabad, May 91 to Mrch'96;

iii. **Lecturer** Civil Engg. Deptt, M.N.R. Engg. College, Allahabad, May 85 to May 91.

7. AWARDS, FELLOWSHIPS AND ACHIEVEMENTS

i. IGS-HEICO award for best research paper published in the field of **ROCK MECHANICS** through Indian Geotechnical Journal in year 2004.

ii. One of the Institute Star Performers at IIT Roorkee for the session 2003-04.

iii. Was one of twenty faculty members from the institute nominated for "Outstanding teacher award" at IIT Roorkee during 2003.

iv. IGS-Dr. B. Rai – S.N. Gupta biennial prize for **Best Paper** in year 2002, on "Earth and Earth Retaining Structures, Including Interaction and Instrumentation" for the years 1999-2000.

v. IGS-HEICO award for best research paper published in the field of **ROCK MECHANICS** through Indian Geotechnical Journal and Conferences in year 1999.

vi. IGS-HEICO award for best research paper published in the field of **ROCK MECHANICS** through Indian Geotechnical Journal and Conferences in year 1997.

vii. Merit Scholarship at BE level.

viii. National Scholarship at intermediate level.

8. PHD SUPERVISED

Sl. No.	Year	Title	Name of research scholar
i	2005	Shear strength behaviour of jointed model material under low CNL condition	B.K. Agrawal
ii	2006	Anisotropic strength behaviour of some Himalayan Rocks	Ajit Kumar
iii	2007	Closure of underground openings in jointed rocks	Choudhari Jaysing
iv	2007	Bearing capacity of shallow foundations on jointed rocks	Ajay Bindlish

M. Tech. Dissertations supervised

Sl. No.	Year	Title	Name of student
1.	2010	Geotechnical modelling of Surbee landslide	Ashish Kumar
2.	2010	Bearing capacity of shallow foundations on rock slopes: An experimental study	Sangeen B. Naik
3.	2010	Analysis of bridge pier foundation on jointed rocks	Md. Rehan Sadique
4.	2009	Analysis of tunnels in jointed rocks	R. Rajaraman
5.	2009	Behaviour of deep tunnels under squeezing ground conditions	Mahesh Tukaram Hnmawale
6.	2008	Quantification of parameters for engineering behaviour of jointed rocks	Ashwin Kumar. M
7.	2008	UDEC modelling of closure of underground openings	Jayaram Naick Bukke
8.	2008	Engineering behaviour of granular materials	Sarita Gupta
9.	2007	Polyaxial criterion for rocks	Major Anil Raj TA
10.	2007	Geotechnical characterisation of a landslide at Mussoorie	Pallerla Srinivas Reddy
11.	2007	Distinct element modelling of jointed rock mass in uniaxial compression	Vijay Kumar
12.	2006	Distinct element modelling of a foundation in jointed rock mass	Rajat Kumar Das
13.	2006	Distinct element modelling of an underground opening in jointed rock mass	Ramnivas Kumawat
14.	2005	An experimental study on closure of an underground opening in jointed rock mass	T. Kaleshwar Rao
15.	2005	An experimental study on bearing capacity of shallow foundations in jointed rocks	B. Chandra Shekar
16.	2004	Ultimate bearing capacity of shallow foundations in jointed rocks	Kalyan Rangadham Vinjamuri
17.	2004	Modelling of strength and deformational behaviour of jointed rock mass under uniaxial loading conditions	Balu Dharavath
18.	2004	Analysis of squeezing of tunnels in jointed rocks	Subbarao Bontha
19.	2003	Characterisation of Model Material for Shear Strength behaviour of Jointed Rocks	Subir Kumar Sharma

20.	2003	Squeezing Potential of Jointed Rocks in Tunnels	Choudhari Jaising Baburao
21.	2003	Diagnostic Study of Failed Canal Slopes	S.C. Reddy
22.	2002	Geotechnical Studies for Stability of Khanera Landslide near Yamunotri	Atul Nayak
23.	2002	Analysis of unsaturated flow in Layered Soils	Jitendra Singh
24.	2002	A Computer Program for Stability Analysis of Rock Slopes for Wedge Failure	Nayan Das
25.	2002	Stress Deformational Behaviour of Layered Foundations	Shailendra Kumar
26.	2002	A computer Program for Joint Analysis Using Stereographic Projections	C.V. Chinadri
27.	2000	Computer Program to Select the Strength Criteria and Designing Tunnels in Heavily Jointed Rocks	Rajeev Kr Singh
28.	2000	Engineering Behaviour of Jointed Rock Like Material Under Direct Shear	Amrendra Kumar
29.	1999	Watershed Management for Sustainable Groundwater Development	S.H. Khan
30.	1999	Geotechnical evaluation of Expansive Soil – Red Mud Mixture	Manoj Kumar Pandey
31.	1999	Development of Software For Ground Water System Analysis	Bibhakar Dwivdi
32.	1999	Engineering Behaviour of expansive Soil- Fly Ash –Red Mud Composite Mix	M.K. Pandey
33.	1999	Engineering Behaviour of a Jointed Rock Mass under Direct Shear	M.K. Chandani
34.	1998	Economic Design of Geosynthetic Reinforced Steep Sloped Earth Embankment	Pankaj Singh
35.	1994	Deterioration of Rocks in Chemical Environment	V.K. Agarwal
36.	1994	Characterisation of Coal Mine Waste	Lalji Yadav
37.	1994	Strength and Deformation Behaviour of Berm Jointed Cement Grouted Quartzite Rock	Rajendra Kumar
38.	1994	Strength and Deformational Behaviour of Multiplanar Grout Jointed Quartzite Rock	Subhash Chandra
39.	1993	Strength and Deformational Behaviour of Step Jointed Cement Grouted Quartzite Rock.	A.K. Dwivedi

M. Tech. Projects supervised

Sl	Year	Title	Name of student
1.	2010	Estimation of stiffness characteristics of gouge from direct shear test	Mayank Suhirid
2.	2010	Discontinuity analysis for a foundation of bridge pier	Mohammad Ali
3.	2010	Effect of stress removal on intact rock strength	Vijaya lakshmi
4.	2009	Application of Q slope Technique to analyze rock slopes	Adhir Sarkar
5.	2009	Stability of rock slopes	Rehan sadique
6.	2008	Assessment of shear strength of coarse granular materials	Rishi Kumar Pandey
7.	2007	Blast design for an underground opening	Jairam Naick
8.	2007	Assessing load carrying capacity of block anchor for a suspension bridge	Sharique Khan
9.	2006	Apparent Poisson's ratio using UDEC	K.L. Ganesh
10.	2006	Stability Analysis of Soil Slope for a Proposed Construction Site at the Foothills of Mussoorie.	Major Anil raj TA
11.	2005	Closure Behaviour of Squeezing and Non-squeezing Tunnels	Vinay Kumar Jain
12.	2005	Bearing Capacity of a Bridge Foundation for a bridge site in Tehri	Jay Kumar
13.	2004	Non linear failure criteria for rocks	Churchill Kumar
14.	2004	Constitutive modelling of granular media	G. Venkat Kishor Kumar
15.	2002	Computer program for graphical representation of deformation modulus of anisotropic rock masses.	Jitendra Singh
16.	2002	Constitutive modelling of jointed rock mass	S.C. Reddy
17.	2002	A computer program for evaluation of shear strength of jointed rocks using strength criteria	Atul Nayak
18.	2002	Study of contaminated soils and remedial techniques	B. Purnachand

M.Tech Seminars supervised

SL	Year	Title	Name of student
1.	2010	Stress dependence of fluid flow through rock joints	Ajay Kr. Gupta
2.	2010	Design of underground repository for nuclear waste disposal	Vijaya Lakshmi
3.	2009	Engineered landfills	Arun Kumar
4.	2009	Pressure dependency of rock mass modulus	Ashish Kumar
5.	2007	Engineering behaviour of rock-fill materials	Sarita Gupta
6.	2007	Lateral load carrying capacity of rock socketed piles	D.Venkata Srinivasa Rao
7.	2006	Support Design of Underground Openings	Pallerla Srinivas Reddy
8.	2006	Engineering Behaviour of Rock Socketed Piles	Ashwin Kumar. M
9.	2005	Load Carrying Capacity of Rock-socketed Piles	Vinay Kumar Jain
10.	2005	Prediction of closure of Underground Openings	Ramnivas Kumawat
11.	2005	Techniques for estimating Squeezing Potential in Tunnels	Jay Kumar
12.	2004	Artificial intelligence in Rock Mechanics	T. Kaleshwar Rao
13.	2004	Discontinuous deformation analysis in jointed rocks	Churchill Kumar
14.	2004	Seepage Analysis in jointed rocks	B. Chandra Shekar
15.	2004	Strength criteria for anisotropic rocks	Balu Dharavath
16.	2004	Deformational behaviour of rock joints under direct shear	Subbarao Bontha
17.	2004	Studies on hydraulic conductivity of jointed rocks	Manmadha Rao
18.	2002	Methods of slope stability analysis in geotechnical engineering	S.C. Reddy
19.	2002	Rheological Aspects of soils	B.S. Kirar
20.	2002	Application of fractal geometry in Rock Engineering	Atul Nayak

9. UNDERGRADUATE PROJECTS GUIDED

Year	Topic
2011	Geotechnical characterisation and assessment of foundation design parameters for rock socket subjected to wind and earthquake loads.
2007	Design and analysis of a suspension bridge (Single lane, Class A loading) of 400 m span for construction in Tehri Garhwal, Uttarkashi.
2007	Slope stabilization and traffic management near Kempty fall
2007	Municiple soild waste management in Roorkee city
2006	Evaluation of a landslide in Mussoorie
2001	A computer program for the analysis of rocky hill slopes
2000	A computer program for analysis and design of shallow foundations
1999	Computer Aided analysis of Slopes
1994	Development of Software for Design of Irrigation Canal System
1990	Design of Canal System for Irrigation
1988	Design of Lift Canal System for Irrigation
1986	Analysis and Design of Earthen Dam

10. MAJOR RESEARCH / CONSULTANCY /DEVELOPMENT PROJECTS

Major Consultancy Projects (Completed)

Sl No	Title of report	Funding Agency	Year
1	Stability analysis of Pier-P2 of Bagchhal bridge across Govind Sagar Reservoir at Swarghat, Bilaspur HP	Gammon India Ltd.	2010
2	Geotechnical investigations for foundation design parameters, Office of Chief Engineer Level-1, Dehradun	PWD Dehradun	2010
3	Geotechnical Investigations for foundation design parameters, Birahi Bridge, Pipalkoti, Chamoli (UK)	THDC, Pipalkoti.	2009

Sl No	Title of report	Funding Agency	Year
4	Soil investigations and recommendations for foundation design of RCC bridge on river Noon, Dehradun.	PWD Dehradun	2009
5	Soil testing and recommendations for foundatin design, Gandhi Shtabdu Hospital, Dehradun.	PWD, Dehradun	2008
6	Soil testing and recommendations for foundation design of structures at Vigilance Directorate, Dehradun UK.	PWD Dehradun	2008
7	Geotechnical investigations and recommendations for bearing capacity of foundations of a bridge at Ch. 16.860 Km, on Pathrakhal-Dodal-Umrasu road, Pauri, Garhwal, Uttarakhand,	M/s R.G. Buildwell Engineers Ltd., Pauri Garhwal	2008
8	Soil investigations and recommendations for foundation esign of RCC bridge on Ratmau River and old Ganga canal, Dhanauri Roorkee	PWD Roorkee	2008
9	Geotechnical investigations for DPR of Rai Chatkeshwar lake, Pitharogarh, June 2009	Uttarakhand Tourisn Development Board Dehradun	2008
10	Stress Strain Analysis of Major Underground Caverns for Vishnugarh Pipalkoti HE Project	THDC Rishikesh	2007
11	Soil Investigations and for Bearing Capacity for Foundation of Car Parking at Muni Ki Reti	Nagar Palika, Panchayat Muni Ki Reti	2007
12	Soil investigations for Well Foundations for 132kV Kashipur Bazpur Line	PTC UL, Srinagar	2007 1 year
13	Plate Load Tests at Naitwar-Mori Hydroelectric project	Naitwar-Mori HE projects	2007
14	Laboratory Testing of Rock Samples for Geo mechanical Properties and Recommendations on Strength Parameters for Major Underground Caverns for Vishnugarh Pipalkoti HE Project	THDC Rishikesh	2007
15	Geotechnical & Geophysical Investigations for Expansion of Ambuja Cement Plant at Darlaghat (HP)	GACL, Darlaghat (HP)	2007
16	Recommendations for Foundations of Structures of Expansion of Ambuja Cement Plant at Darlaghat (HP)	GACL, Darlaghat (HP)	2007
17	Soil testing and recommendations for foundation design of Doon University, Dehradun.	UPRNN Ltd., 71 Rajpur Road, Dehradun	2006
18	Soil Testing and Recommendations on Foundation Design of Yojna Bhawan, Dehradun (Uttarakhand)"	Ex Engineer, Construction Division, PWD, Dehradun.	2006
19	Soil testing and recommendations for foundation design of buildings at CM residence, Dehradun.	Ex Engineer, Construction Division, PWD, Dehradun.	2007
20	Geotechnical investigations for design of foundations of Type- I, II,III residences, pooled housing scheme, Kedarpuram, Dehradun.	Ex Engineer, Construction Division, PWD, Dehradun.	2006
21	Soil testing and recommendations for foundations of Type-IV residences in block pooled housing Yojna, Laadpur, Dehradun	Ex Engineer, Construction Division, PWD, Dehradun.	2006
22	Soil testing and Recommendation for foundation Design of Bijapur Guest House, Dehradun, Uttarakhand.	Ex Engineer, Construction Division, PWD, Dehradun	2006
23	Stability analysis at the site for Civil Services Institute, Rajpur, Dehradun, Uttarakhand.	Ex Engineer, Construction Division, PWD, Dehradun	2006
24	Geotechnical Investigation and Recommendation for foundation design of Civil Services Institute at Rajpur, Dehradun, (Uttarakhand)	Ex Engineer, Construction Division, PWD, Dehradun	2006
25	Slope stability analysis at Bhason suspension bridge site, Tehri (Uttarakhand)	Constn Division PWD Tehri	2006
26	Soil testing and recommendations for foundation design of a bridge at river Devarniyan (Uttarakhand)	PWD Provincial Division Rudrapur	2006
27	Geotechnical testing for bearing capacity of foundations of Bhanso LMV suspension bridge, Tehri.	Ex Engineer, Construction Division, New Tehri	2006
28	Bearing capacity of shallow foundations of bridges at Moth and	Executive Engineer,	2006

Sl No	Title of report	Funding Agency	Year
	Swarna rivers, Dehradun.	Provincia; division, PWD, Dehradun.	
29	Soil testing and recommendations for foundation design of Governor's residence Dehradun.	Ex Engineer, Construction Division, PWD, Dehradun.	2006
30	Soil testing and recommendations for the foundation design of a bridge on river Noon, Dehradun.	Ex Engineer, Construction Division, PWD, Dehradun.	2006
31	Geotechnical Investigations for foundation Design of three Police Stations in Dehradun	Executive Engineer, Construction Division, PWD, Dehradun	2006
32	Soil investigations and recommendations for foundation design of Auditorium and Sachivalaya in Circuit house, Rajbhawan, Dehradun, UA.	Ex Engineer, Construction Division, PWD, Dehradun.	2005;
33	Soil investigations for foundation design of Types-IV, III, II and I residences, Indira Nagar, Dehradun.	Ex Engineer, Construction Division, PWD, Dehradun.	2005.
34	Geotechnical testing and recommendations for bearing capacity of Rispna bridge foundation, Kedarpuram, Dehradun U.A.	Construction Division, PWD, Dehradun	2005
35	Soil Testing and Recommendations on Soil Design Parameters for Various Buildings In Police Line, Race Course, Dehradun (UA)	Ex Engineer, Construction Division, PWD, Dehradun.	2005
36	Soil investigations and recommendations for foundation at Udyog Nideshalaya, Dehradun (Uttaranchal)	Ex Engineer, Construction Division, PWD, Dehradun.	2004
37	Geotechnical investigations and recommendations for bearing capacity of foundation of Bhason LMV suspension bridge, Tehri Garhwal, Uttaranchal.	SE (Rehab) Tehri Dam Project, Dehradun	2005
38	Results of Soil investigation for design of foundations, Syndicate Bank, Housing Complex, Vasundhara, Ghaziabad, UP	UP Housing Board Ghaziabad	2002
39	Soil investigations and recommendations for design of foundations of buildings at Secretariat Compound, Dehradun.	Ex Engineer, Construction Division, PWD, Dehradun.	2004
40	Soil investigations and recommendations for foundations at GIC and PHC buildings at Chham, Tehri.	Ex Engineer, Construction Division, PWD, New Tehri.	2004
41	Soil investigations and recommendations for design of foundations, Syndicate Bank Housing Complex, Vasundhara Ghaziabad.	UP Housing Board Ghaziabad	2002
42	Soil investigations and recommendations for bridge foundations at Km 78 and 86, Meerut-Karnal road	Ex Engineer, Provincial Division, PWD, Muzaffar Nagar.	2004
43	Soil Investigations and Recommendations for Foundation for the Proposed extension of community Health Centre at Karnaprayag,	Uttaranchal Health system development, Dehradun	2003
44	Soil Investigations and Recommendations for Foundation Design of structure at the site of Uttaranchal Health-System Development at Gopeshwar	Uttaranchal Health system development, Dehradun	2003
45	Soil investigations and recommendations of the proposed site for residential complex and office of Cane and Sugar Commissioner, Uttaranchal, Kashipur.	Cane and Sugar Commissioner Uttaranchal Kashipur	2003
46	Soil investigations and recommendations for the foundation at the proposed site for Excise Commissioner's Office, Dehradun,	PWD Dehradun	2003
47	Soil investigations and recommendations for the foundation of overhead water tank at Water Works Compound, Dilaram Bazar, Dehradun	Uttaranchal Peya Jal Nigam Dehradun	2003
48	Soil investigations and recommendations for the foundation at Naveen Mandi Sthal, Roorkee	Uttaranchal Mandi Parishad	2003
49	Soil Investigations and Recommendations for the foundation of overhead water tank at Bajpur (Uttaranchal)	Mandi Parishad Haldwani	2003
50	Soil investigations and recommendations for the foundation of overhead water tank at Defence Colony, Dehradun	Sainik Cooperation housing Society Defence Colony Dehradun	2003

Sl No	Title of report	Funding Agency	Year
51	Strengthening of the Beas River Banks for the purpose of widening of Manali – Solang - South portal road as Approach road to the Rohtang Tunnel	Border Road Organisation, Manali	2002
52	Soil Investigations and Recommendations for Foundation for Pavement and the Building Works of Extension/Up gradation of Dehradun Airport	Airport authority of India	2002
53	Preliminary design of road bridges,	Forrest and Valley Development Board, Uttaranchal Govt Dehradun	2003
54	Geotechnical Investigations for MES sites at Lansdowne.	MES Lansdowne	2002
55	Installation of the Pitching- Jerosite containment embankment, Vishakapatnam	MECON Ltd New Delhi	2002
56	Triaxial Testing of Granite specimens	CMRI Roorkee	2002
57	Geotechnical Investigations and recommendations for foundation design of two storied building of RES, Dehradun	RES Dehradun	2002
58	Geotechnical Investigations and Recommendations for design of foundations, Mandi parishad head Quarters, Rudrapur, UA.	Mandi Parishad, Haldwani	2002
59	Geotechnical Investigations for Bridges at Ring Road, Dehradun, UA.	PWD Rishikesh	2002
60	Geotechnical Investigations for Bridges on Raipur- Thano-Bhogpur Road and Km 12 and 20 under DASP.	PWD Rishikesh	2002
61	Geotechnical Investigations for Foundation of a Multi-storeyed Building at Chaufataka, Allahabad.	Allahabad Development Authority, Allahabad	
62	Validation of Non-Covered Rural Habitations of Allahabad, Banda, Fatehpur and Pratapgarh districts for drinking water supply.	Rajeev Gandhi national Drinking Water Mission New Delhi	1994

Developmental Projects

1. Modernisation of the Geotechnical Engineering Laboratory at MNR Engg. College, Allahabad, under the scheme MODROB by MHRD, (Rs. 800 thousands) (2000)
2. Development of Geoenvironmental Engineering Laboratories at Engg. College Allahabad: Rs 600 Thousands, Funded by MHRD.(1998)
3. Development of Rock Mechanics Laboratory at M.N.R. Engineering College, Allahabad: Rs. 0.8 Million, Funded by INCRMTT New Delhi. (1993).

Research Projects

Sl	Title	Funding Agency	Financial outlay Rs.	Duration
1.	Geotechnical Evaluation for Development of Landslide Model for Selected Landslide in Uttaranchal	DST New Delhi	17,39,000	May 2005 – May 2008
2.	Pre-Proposal for Identification of a Landslide Problem in the State of Uttaranchal	DST New Delhi	1,20,000/-	2002-2003
3.	Landslide Analysis and Preventive Measures for Hilly Regions of Uttaranchal	IIT Roorkee	50,000/-	2001-2002
4.	Integrated Watershed Management for a Rural Area in Eastern Uttar Pradesh	MHRD New Delhi	7,00,000/-	2000-2002

11. ADMINISTRATIVE WORKS

i. Chief Warden, Rajendra Bhawan, IIT Roorkee, Jan 2010 to till date.
ii. Coordinator Geotechnical Engineering Group, Deptt. of Civil Engg, IIT Roorkee, July 2010 to till date.
iii. Coordinator Geotechnical Engineering Group, Deptt. of Civil Engg, IIT Roorkee April 2006 to 2008.
iv. Deputy Chief Advisor, Students Club IIT Roorkee, Jan 8th, 2007 to July 27th, 2010.
v. OC Placement, Deptt of Civil Engg, IIT Roorkee, June 2004 to May 2006.
vi. Member DRC and OC M. Tech, Geotech Section, CED, IIT Roorkee, May 2004 to May 2006.

vii. Member CAD and Computer Committee, CED, IIT Roorkee, May 2004 to May 2005.
viii. Warden Ganga Bhawan at IIT Roorkee, Nov 2001 to Dec 2004.
ix. Member B&M Committee at CED IIT Roorkee May 4th, 2001 to April 2004.
x. Advisor Construction M.N.R. Engg. College, Allahabad: October 1997- March 2001.
xi. Warden, R.N. Tagore Hostel, M.N.R. Engg. College, Allahabad, Jan 99- April 2001.
xii. Astt. Warden, SVB Patel Hostel, M.N.R. Engg. College, Allahabad, July 91- July 93.
xiii. NSS Programme Officer at M.N.R. Engg. College, Allahabad- 211 004, during 1989-92

12. MEMBERSHIP OF PROFESSIONAL BODIES

i. Indian Society for Rock Mechanics and Tunnelling Technology (LM-526)
ii. Indian Geotechnical Society (LM-2403)
iii. Indian Society for Construction Materials and Structures (LM-183)
iv. Indian Water Resources Society (LM-90-2754)
v. International Society for Rock Mechanics. (Through Indian Committee)
vi. International Society for Soil Mechanics and Geotechnical Engineering. (Through Indian Committee)

13. CONFERENCES /SHORT TERM COURSES ORGANISED

i. Short term course "Short term training on strength of materials", May 13th to 17th 2008, Coordinators: S.K. Mishra, Mahendra Singh; Department of continuing Education, IIT Roorkee.
ii. Organising secretary "National Conference on Foundations and Retaining Structures", 23-24 May, 2007, Roorkee.
iii. QIP Short term course "Advances in Rock Engineering" 26-31 December 2006, Department of Civil Engineering, IIT Roorkee, Coordinators: M. Singh, N.K. Samadhiya.
iv. Short-term course "Landslide analysis and Control" Dec 8-12, 2003. Coordinators R. Anbalagan, M. Singh.
v. QIP Short Term Course on "Rock Mechanics in Civil Engineering Projects" 22-26 December 2003, Department of Civil Engineering, IIT Roorkee, coordinators: M. Singh, N.K. Samadhiya.
vi. Treasurer "Indian Geotechnical Conference IGC 2003: *Geotechnical Engineering for Infrastructural Development",* Dec 18-20, Roorkee
vii. Organising Secretary "Indian Geotechnical Conference IGC-2002: Geotechnical Engineering-Environmental Challenges", 20-22 December 2002, Allahabad, INDIA.
viii. Organising Secretary "National Seminar on Geotechnical and Environmental Aspects of managing Municipal Solid Waste", 30th October, 1999, M.N.R. Engg. College, Allahabad, INDIA.
ix. Organising Secretary "National Workshop on Environmental Protection Through Integrated Waste Management ", 25 to 30th October, 1999, M.N.R. Engg. College, Allahabad, INDIA.
x. Organising Secretary of "Indian National Conference on Geoenvironment- Characterisation, Analysis, Design & Practice", 9-10 April, 1998, M.N.R. Engineering College Allahabad, INDIA.

14. CONFERENCE/WORKSOPS ATTENDED

i. *INDOROCK 2009: Second Indian Rock Conference,* November 12-13, 2009, CSMRS New Delhi.

ii. International Conference on Rock Joints and Jointed Rock Masses, Jan 4-10, 2009, Tucson, Arizona, USA

iii. Indian Geotechnical Conference, 2008, Bangalore, December 17 – 19, 2008.

iv. National Seminar-cum-Workshop on "Recent Trends and Applications in Geo-Tech Engineering", January 17 to 19, 2008, Panjab University, Chandigarh.

v. Workshop on Rock Mechanics and Tunnelling Techniques, October 10-12th, 2007, Gangtok. India.

vi. Workshop on "Experiences gained in Design and Construction of Tala Hydroelectric Project, Bhutan", June 14-15th, 2007, CSMRS, New Delhi.

vii. Fourth Asian Rock Mechanics Symposium: Rock Mechanics in Underground Construction, ed. Leung C.F. and Zhou Y.X., 8-10 Nov, 2006, Singapore,.

viii. Indian Geotechnical Conference-2006, 14-16 Dec, Chennai.

ix. Indian Geotechnical Conference- Geotechnical Practices for Environmental management, Disaster Mitigation and Foundation Engineering, Ahmedabad, India, Dec 17-19, 2005.

x. Indian Geotechnical Conference 2004: Ground Engineering: Emerging Techniques, Dec 17-19, 2004.

xi. Proc. Indian Geotechnical Conference 2003- Geotechnical Engineering for Infrastructural Development, Dec 18-20, Roorkee, India

xii. Indian Geotechnical Conference IGC-2002, Geotechnical Engineering-Environmental Challenges Allahabad.

xiii. ISRM Regional Symp. On Advancing Rock Mechanics Frontiers to meet the Challenges of 21st Century, Sept 2002, New Delhi,.

xiv. Indian Geotechnical Conference, December, 2001, Indore,.

xv. International Conf. on Geological and Geotechnical Engg-GeoEng2000, 19 - 24 November, Melbourne, Australia,.

xvi. Proc. Indian Geotechnical Conference-1999, Calcutta.

xvii. National Workshop on Environmental Protection through Integrated Waste management ENPRO:IWM, 25-30th Oct 1999, Allahabad,.

xviii. National Workshop on Environmental Protection through Integrated Waste Management ENPRO:IWM, 25-30th Oct 1999, Allahabad, India.

xix. Indian Geotechnical Conference-1998, N. Delhi,.

xx. Indian National Conference on Geoenvironment- Characterisation, Analysis, Design & Practice, 9-10 April, 1998, M.N.R. Engineering College Allahabad.

xxi. Indian Geotechnical Conference-1997, Vadodara.

15. CITATION

A. MOST DOWNLOADED ARTICLES

i. The paper entitled ***"High Lateral Strain Ratio in Jointed Rock Masses"***, by Singh M. and Singh B. in international Journal *Engineering Geology*, Vol. 98 (3-4) May 2008, pp 75-85, was rated **16th** amongst top 25 articles within the Engineering Geology Journal, during quarter APRIL-JUNE 2008 by Science Direct.

ii. The paper entitled "***Critical strain and squeezing of rock mass in tunnels***" by Singh M., Singh B. and Choudhari, J. in the international journal *Tunnelling and Underground Space Technology,* Volume 22, Issue 3, May 2007, Pages 343-350, was rated **14th** during quarter JAN – March 2007, **11th** during quarter APRIL-JUNE 2007 and **11th** during quarter JULY-SEPT 2007 amongst top 25 hottest articles within the journal Tunnelling and Underground Space Technology, by Science Direct..

iii. The paper entitled "***Empirical methods to estimate the strength of jointed rock masses***" published in international journal *Engineering Geology*, Volume 77, Issue 1-2, 1 February 2005, pp:127-137, was rated **2nd** amongst top 25 articles within the Engineering Geology Journal, during quarter JAN - MAR 2005 by Science Direct.

B. ARTICLES (OTHER THAN SELF) IN WHICH PUBLICATIONS HAVE BEEN CITED

i. Liu, X., Wang, S., Wang, E. (2011), A study on the uplift mechanism of Tongjiezi dam using a coupled hydro-mechanical model, Engineering Geology, Volume 117, issue 1-2, year 2011, pp. 134 – 150.

ii. Elmo D. and Stead D. (2010) An Integrated Numerical Modelling–Discrete Fracture Network Approach Applied to the Characterisation of Rock Mass Strength of Naturally Fractured Pillars. *Rock Mechanics and Rock Engineering*, 43(1), 3-19.

iii. Wang T.T., Huang T.H. (2009) A constitutive model for the deformation of a rock mass containing sets of ubiquitous joints, *International Journal of Rock Mechanics and Mining Sciences*, 46(3), 521 – 530.

iv. Li, Y.-H., Peng, Z.-B., Zhong, Z.-Q., He, Z.-M., Peng, W.-X., (2009) Strength prediction for rock mass based on Barton-Bandis nonlinear failure criterion, Zhongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Central South University (Science and Technology) 40 (5), pp. 1388-1391.

v. Zhu, Z.-Q., Li, H.-Q., Liu, Q.-Y., He, X.-Q., (2009) Numerical simulation for tunnel excavation in stratified rock mass by FLAC3D, Proceeding 2009 IEEE 10th International Conference on Computer-Aided Industrial Design and Conceptual Design: E-Business, Creative Design, Manufacturing - CAID and CD'2009 , art. no. 5375152, pp. 2271-2274.

vi. Zhang L. (2009) Estimating the strength of jointed rock masses, *Int. Jl. Rock Mech. Min. Sci*, 43 (4), 391-402, DOI: 10.1007/s00603-009-0065-x.

vii. Verma A.K. and Singh T.N. (2009) Modeling of a jointed rock mass under triaxial conditions. *Arabian Journal of Geoscience*, 3(1), 91-103.

viii. Vorobiev, O. (2008) Generic strength model for dry jointed rock masses, International Journal of Plasticity 24 (12), pp. 2221-2247.

ix. Suits, L. D. (2008) A Polyaxial System for Testing of Jointed Rock Mass Models. *Geotechnical Testing Journal* 31(4).

x. Potvin, Y., Hadjigeorgiou, J. (2008) Ground support strategies to control large deformations in mining excavations, SIAMM - Journal of The South African Institute of Mining and Metallurgy 108 (7), pp. 397-404.

xi. Rodríguez-Sastre, M. A. (2008) Relationship between cleavage orientation, uniaxial compressive strength and Young's modulus for slates in NW Spain. *Bulletin of Engineering Geology and the Environment*.

xii. Ramamurthy T. (2007) Strength, modulus and stress-strain responses of rocks, *Engineering in Rocks for Slopes, Foundations and Tunnels*, ed. T. Ramamurthy, Prentice Hall of India Pvt. Ltd, New Delhi, pp 93-137.

xiii. Ramamurthy T. (2007) Engineering classification of rocks and rock masses, Engineering in Rocks for Slopes, Foundations and Tunnels, ed. T. Ramamurthy, Prentice Hall of India Pvt. Ltd, New Delhi, pp 138-175.

xiv. Nunes, M.A., Meguid, M.A. (2006) The near-face displacement of D-shaped tunnels in isotropic & anisotropic media, Electronic Journal of Geotechnical Engineering, paper- 11 A.

xv. Singh B. and Goel R.K. (2006) Tunnelling in weak rocks, Elsevier Geo-engineering book series, Vol 5, Pub. Elsevier, UK.

xvi. Tiwari, R.P., Rao, K.S. (2006) Deformability characteristics of a rock mass under true-triaxial stress compression, Geotechnical and Geological Engineering, 24 (4), 1039-1063.

xvii. Tiwari, R.P., Rao, K.S. (2006) Influence of intermediate principal stress on strength and modulus of rock mass, Geotechnical Engineering, 37 (1), 29-41.

xviii. Tiwari, R.P., Rao, K.S. (2006) Post failure behaviour of a rock mass under the influence of triaxial and true triaxial confinement, *Engineering Geology*, 84 (3-4), 112-129.

xix. Wang, C. (2005) Fracture mechanics principles of anchorage for layered rock mass slope Yanshilixue Yu Gongcheng Xuebao, Chinese Journal of Rock Mechanics and Engineering, 24 (11), 1900-1904.

xx. Yang, H.-J., Wang, M.-S., Liu, G. (2005) Applications of pre-geological prediction in tunnel construction, Journal of China University of Mining and Technology 15 (3), 203-207.

xxi. Zhang L, (2005) Engineering properties of rocks, pub: Elsevier Science Ltd

xxii. Ramamurthy, T. (2004) A geo-engineering classification for rocks and rock masses, Inte*rnational Journal of Rock Mechanics and Mining Sciences*, 41 (1), pp. 89-101.

xxiii. Tiwari R.P., Rao K.S. (2004) Physical modeling of a rock mass under a true triaxial stress state, *International Journal of Rock Mechanics and Mining Sciences*, 41 (SUPPL. 1), pp. 2A 141-6.

xxiv. Szymakowski J. (2003) Direct shear testing of jointed soft rock masses, PhD thesis, Monash University, Australia.

xxv. Jing L. (2003) A review of techniques, advances and outstanding issues in numerical modelling for rock mechanics and rock engineering, Int Jl Rock Mech Min Sci,40, 283-353.

xxvi. Sheorey P. R. (1997) Empirical rock failure criteria. A. A. Balkema, Rotterdam.

16. PROCEEDINGS/ BOOKS EDITED

Sl	Title	Editors

i	National Conference on Foundations and Retaining Structures, 23-24 May, 2007, Roorkee.	M.N. Viladkar Mahendra Singh Priti Maheshwari
ii	National Workshop on Environmental Protection Through Integrated Waste Management, 25 to 30th October, 1999, M.N.R. Engg. College, Allahabad, INDIA.	R.K. Srivastava S.K Duggal M. Singh R.P. Tiwari A.K. Nema
iii	Indian National Conference on Geoenvironment- Characterisation, Analysis, Design & Practice, 9-10 April, 1998, M.N.R. Engineering College Allahabad, INDIA.	R. K. Srivastava S.K. Duggal M. Singh

17. LIST OF PUBLICATIONS

A. Book Chapters

i. **Singh M.** (2010) Shear strength of rock joints and rock masses, in Slope Stavility: Natural and Man Made Slope, ed. T.N. Singh, Pub: Vayu Education of India, pp 43-75.

B. Refereed Journals

i. Singh M. Raj A. Singh B. (2011) Modified Mohr-Coulomb Criterion for Non-linear Triaxial and Polyaxial Strength of Intact Rocks, Accepted for publication in Int J Rock Mech Mining Sci (2011), doi:10.1016/j.ijrmms.2011.02.004.

ii. Singh M., Viladkar M.N., Choudhari J. and Rajaraman R. (2011) Stress Dependency of Rock Mass Modulus in Predicting Closure of Underground Openings, *Journal of Rock Mechanics and Tunnelling Technology.* Vol 17, No. 1, 25-38.

iii. Singh B., Shankar D. and **Singh M**. (2009) Control of Earthquakes by Lakes in Himalays and Vicinity, *Journal of Rock Mechanics and Tunnelling Technology*. Vol 15, No.1, January 2009, 55-68.

iv. **Singh M.** and Singh B. (2008) High Lateral Strain Ratio in Jointed Rock Masses, *Engineering Geology*, Vol. 98 (3-4) May 2008, pp 75-85.

v. **Singh M.**, Singh B. and Choudhari J. (2007) Critical Strain and Squeezing of Rock Mass in Tunnels, *Tunnelling and Underground Space Technology*, 22(3), May 2007, 343-350, (IF:0.408)

vi. **Singh M.** and Singh B. (2007) Critical State Mechanics in Prediction of Polyaxial Strength of Intact Rocks, *Journal of Rock Mechanics and Tunnelling Technology.* Vol 13, January 2007, 3-13.

vii. **Singh M**. and Rao K.S. (2005) Bearing Capacity of Shallow Foundations in Anisotropic non Hoek-Brown Rock Masses, *ASCE Journal of Geotechnical and Geo-environmental Engineering* , 131 (8), Aug. 2005, 1014-1023.

viii. **Singh M.** and Rao K.S. (2005) Physical and Constitutive Modelling to Simulate Jointed Rock Mass under Uniaxial Stress State, *Journal of Rock Mechanics and Tunnelling Technology,* 11(2), July 2005, 111-131.

ix. **Singh M.** and Singh B. (2005) A Strength Criterion Based on Critical State Mechanics for Intact Rocks, *Rock Mech & Rock Engg* , 38 (3), July-Sept 2005, 243–248.

x. **Singh M.**, Singh B. and Shankar D. (2005) Critical State Mechanics in Non-Linear Failure Criterion for Rocks, *Journal of Rock Mechanics and Tunnelling Technology***,** 11(1), 13-24.

xi. **Singh Mahendra** and Rao K.S. (2005) Empirical Methods to Estimate the Strength of Jointed Rock Masses, *Engineering Geology*, 77(1-2) , 127-137.

xii. **Singh M.**, Rao K.S. and Ramamurthy T. (2004) Engineering Behaviour of Jointed Rock Mass, *Indian Geotechnical Journal*, 34(2), 164-198.

xiii. **Singh M.,** Singh B., Choudhari J. B. and Goel R. K. (2004) Constitutive Equations for 3-D Anisotropy in Jointed Rocks and its Effect on Tunnel Closure', *Int. Jl. Rock Mech. Min. Sci.*, 41(3), 484-485.

xiv. **Singh M.**, Rao K.S., Ramamurthy T, (2002), Strength and Deformational Behaviour of Jointed Rock Mass, *Rock Mech & Rock Engg*., 35(1), 45-64.

xv. **Singh M.** (2000) Applicability of a Constitutive Model to Jointed Block Mass, *Rock Mech & Rock Engg*., 33 (2), 141-147.

C. E-Journals

xvi. **Singh M**., Singh B. and Choudhari J. (2008) Assessment of Squeezing Potential of Rock Mass in Tunnels, E-Journal of UNITRACC, Article: Jan 01, 2008, Germany, <http://www.unitracc.com/>.

D. Conferences and Seminars

i. **Singh M.** (2010) Engineering behaviour of Rocks and Rock Masses, Short term course on "Underground Engineering", Editors: R.K. Goel, R.D. Dwivedi, February 15-17, 2010, Institution of Engineers, Roorkee, pp 63-81.

ii. **Singh M.** and Rao K. S. (2009) An Approach to Estimate Ultimate Strength of Jointed Rock Mass, Proc. *INDOROCK-2009: Second Indian Rock Conference,* November 12-13, 2009, CSMRS New Delhi, pp 105-113.

iii. **Singh M.**, Choudhari J. and Samadhiya N.K., (2009), An Experimental Study To Predict Ground Response Curve for Tunnels, Paper No. 1017, *Proc. International Conference on Rock Joints and Jointed Rock Masses*, Jan 4-10, 2009, Tucson, Arizona, USA.

iv. Kumar V. and **Singh M.** (2008) Distinct Element Modelling of a Jointed Rock Mass in Uniaxial Compression, Proceeding of Indian Geotechnical Conference, 2008, Bangalore, December 17 – 19, 2008.

v. **Singh M**. and Singh B. (2008) Laboratory and Numerical Modelling of A Jointed Rock Mass, *Proceedings of the 12th International Conference of International Association for Computer Methods and Advances in Geomechanics (IACMAG),* 1-6 October, 2008, Goa, India

vi. **Singh M.**, Singh B., Samadhiya N.K. and Choudhari J. (2007) Critical strain: A measure of squeeezing problems in tunnels, *Proceedings 11th Congress of the International Society for Rock Mechanics – Ribeiro E Sousa, Olalla & Grossmann (eds), 815-818.*

vii. Samadhiya N.K., Viladkar M.N. and Singh M. (2007) Support pressures and stability of shotcrete of a cavern', Proc. 13th Asian Regional Conference on Soil Mechanics and Geotechnical Engineering, Kolkata, India, December 10-14, 2007, Vol. 1, pp. 548-552.

viii. **Singh M.** and Choudhari J (2007) Predicting ground response curve for underground openings, *Workshop on Rock Mechanics and Tunnelling Techniques*, Gangtok, Sikkim, India, 10-12 October 2007, ed. K.G. Sharma, G N Mathur, A.C. Gupta, p. 49-61.

ix. Bindlish A., **Singh M.** and Samadhiya, N.K. (2007) Experimental study on bearing capacity of foundation on intact rocks, *Proc. National Conf. on Foundations and Retaining Structures (NCFRS 2007)*, Roorkee, India, May 23-24, 2007, pp. 63-66.

x. Bindlish A., **Singh M** and Samadhiya N.K. (2007) Bearing capacity of jointed rock mass- A Review, National Conference on *Emerging technology and Developments in Civil Engineering*, 22-23 March 2007, Govt. College of Engineering, Amravati, India. IV:1-7.

xi. **Singh M.,** Choudhari J. and Rao T. K. (2006) Physical and Numerical Modelling of Underground Opening in Jointed Rock Mass, ISRM Int. Symp. 2006, 4th *Asian Rock Mechanics Symposium: Rock Mechanics in Underground Construction*, ed. Leung C.F. and Zhou Y.X., 8-10 Nov, Singapore, p. 143.

xii. Kumar A., Samadhiya N. K. and **Singh M.** (2006) Experimental Study on Strength and Deformation Characteristics of Phyllite, ISRM Int. Symp. 2006, 4th *Asian Rock Mechanics Symposium: Rock Mechanics in Underground Construction*, ed. Leung C.F. and Zhou Y.X., 8-10 Nov, Singapore.

xiii. **Singh M.** and Choudhari J. (2006) A Weakness Coefficient to Assess Engineering Response of Jointed Rocks, *Indian Geotechnical Conference-2006,* 14-16 Dec, Chennai.

xiv. Agrawal B.K., **Singh M.** and Samadhiya N. K. (2006),Prediction of Shear Strength of Model Rock Joints under CNL Condition, *Proc. Indian Geotech. Conference (IGC-2006),* Madras, India, 14-16 Dec 2006, pp. 383-384.

xv. **Singh M**. (2005) Bearing Capacity of Shallow Foundation in Jointed Rocks- A Case Study, *Proc. Indian Geotechnical Conference 2005: Geotechnical Practices for Environmental management, Disaster Mitigation and Foundation Engineering,* Ahmedabad, India, Dec. 17-19, pp 335-338.

xvi. Agrawal B.K., **Singh M.** and Samadhiya N.K. (2005) A Constitutive Model for Rough Rock Joints, *Proc. Indian Geotechnical Conference 2005: Geotechnical Practices for Environmental management, Disaster Mitigation and Foundation Engineering,* Ahmedabad, India, Dec. 17-19, pp 371-374.

xvii. Kumar A., Samadhiya N.K. and **Singh M.** (2005) Laboratory Examination of Strength and Deformation Characteristics of Anisotropic Rocks, *Proc. Indian Geotechnical Conference- Geotechnical Practices for Environmental management, Disaster Mitigation and Foundation Engineering,* Ahmedabad, India, Dec 17-19, pp 165-168.

xviii. **Singh M.** (2005) Modelling of Rotational Mode in Ladanyi Archambault Failure Criterion, *Proc. of the national Conf. on Geotechnics in Environmental Protection*, Eds. Srivastava and Tiwari, Allahabad, India, April 9- 10, pp VIII-44 – VIII47.

xix. Bindlish A, **Singh M.** and Samadhiya N.K. (2005) Failure Criteria for Rock and Rock Masses, *Proc. of the national Conf. on Geotechnics in Environmental Protection*, Eds. Srivastava and Tiwari, Allahabad, India, April 9- 10, pp III-46 – III49.

xx. Bindlish A., **Singh M.** and Samadhiya N.K. (2005) Bearing Capacity Approaches for Rocks – A Review, Proceedings *Conference on Geotechnics and Environment for Sustainable Development (GSD- 2005)*, Nagpur, pp. 20-25.

xxi. Agrawal B.K., **Singh M.** and Samadhiya N.K. (2004) A Slip Based Constitutive Model for Rough Rock Joints. *Proceedings 3rd Asian Rock Mechanics Symposium "Contribution of Rock Mechanics to the New Century"*, Eds. Ohinishi and Aoki, Kyoto, Japan, November 30 – December 2, 2004, pp 1007-1012.

xxii. **Singh M.** and Singh B. (2004) Critical State Concept and a Strength Criterion for Rocks, *Proceedings 3rd Asian Rock Mechanics Symposium "Contribution of Rock Mechanics to the New Century"*, Eds. Ohinishi and Aoki, Kyoto, Japan, November 30 – December 2, 2004, pp 877-880.

xxiii. **Singh M.** and Singh Bhawani (2004) Critical State Concept in Determination of Strength of Jointed Rocks, Proc. *Indian Geotechnical Conference 2004: Ground Engineering: Emerging Techniques*, Dec 17-19, Warangal, India, pp 100-103.

xxiv. Agarwal B.K., **Singh M.**, Samadhiya N. K. (2004) Direct Shear Testing of Jointed Soft Rock under Constant Normal Load Conditions, *Proc. Indian Geotechnical Conference 2004- Ground Engineering: Emerging Techniques*, Dec 17-19, Warangal, India, pp 73-76.

xxv. Kumar Ajit, **Singh M.** and Samadhiya N K (2004) An Experimental Study on True Shear Strength Parameters, *Proc. Indian Geotechnical Conference 2004- Ground Engineering: Emerging Techniques*, Dec 17-19, Warangal, India, pp 41-45.

xxvi. Singh B., Shankar D, **Singh M.**, Samadhiya N.K. and Anbalagan R. (2004), Earthquake Risk Reduction by Laks Along Active Faults, *Proc. 8th World Multi Conf on Systemics*, Cybermetics and Informatics (SCI-2004), Orlando, Florida, USA, July 18-21, 2004.

xxvii. **Singh M.** and Singh Bhawani (2003) A Simple Parabolic Strength Criterion for Intact Rocks, *Proc. Indian Geotechnical Conference 2003- Geotechnical Engineering for Infrastructural Development*, Dec 18-20, Roorkee, India, pp 555-558.

xxviii. Agarwal B.K., **Singh M.**, Samadhiya N. K. (2003) Shear Strength Behaviour of a Model Rock Joint, *Proc. Indian Geotechnical Conference 2003- Geotechnical Engineering for Infrastructural Development*, Dec 18-20, Roorkee, India, pp 551-554.

xxix. **Singh** M.**,** Choudhari Jaysing (2003), Strength and Deformational Behaviour of Jointed Rock Masses, Proc. *Symp. on Advances in Geotechnical Engineering: SAGE-2003*, March 7 –9, 2003, IIT Kanpur India.

xxx. **Singh M.,** Srivastava R.K. and Tiwari R.P. (2002) Predicting Squeezing Potential in Tunnels Excavated in Jointed Rocks, *Proc. Indian Geotechnical Conference IGC-2002, Geotechnical Engineering-Environmental Challenges* Allahabad, India, 461-464.

xxxi. **Singh M.,** Srivastava R.K. and Kumar S. (2002) Constitutive Modelling of a Jointed Mass, *Proceedings EUROCK-200, ISRM International Symposium on Rock Engineering for Mountainous Regions*, 25-28th Nov, 2002, Madeira, Portugal.

xxxii. **Singh M.** (2002) A Methodology to Analyse Squeezing Potential of Tunnels in Jointed Rocks, *Proc. ISRM Regional Symp. On Advancing Rock Mechanics Frontiers to meet the Challenges of 21st Century*, Sept 2002, New Delhi, pp III-72 to III-79.

xxxiii. **Singh M.,** Srivastava R.K. and Kumar A. (2001), Shearing Behaviour of Anisotropic Mass Under C-N-L Conditions, *Proc. IGC-2001*, Indore, India, 67-70.

xxxiv. Ramamurthy T., K. Rao K.S., **Singh M.** (2000), Prediction of Engineering Behaviour of Jointed Block Mass, *Proc. Int. Conf. TUNNELLING ASIA'2000- Need for Accelerated Underground Construction-Issues and Challenges*, 26-29 Sept., New Delhi, India, Eds. S.P. Kaushish and T. Ramamurthy, 11-16.

xxxv. **Singh M.**, Rao K.S. and Ramamurthy T. (2000) An Approach to Evaluate Strength and Modulus of Rock Mass, *International Conf. on Geological and Geotechnical Engg-GeoEng2000*, 19 - 24 November, Melbourne, Australia, Paper No. UW-994.

xxxvi. **Singh M.**, Rao K.S. and Ramamurthy T. (1999) Assessment of Strength and Deformational Behaviour of Jointed Block Mass, *11th Asian Regional Conference on Soil Mech. And* Geotechnical *Engineering*, Hong. Et al. (eds.), Korea, 16-20 Aug, 325-328.

xxxvii. **Singh M.**, Srivastava R.K. and Singh Pankaj (1999) A software for Design of geosynthetic Reinforced Steep Sloped Earth Embankment, *Proc. Indian Geotechnical Conference-1999*, Calcutta, 133-136.

xxxviii. **Singh M.** (1999) Disposal of Solid Waste on Land, Proc. *National Workshop on Environmental Protection through Integrated Waste management ENPRO:IWM*, 25-30th Oct 1999, Allahabad, India, 21-26.

xxxix. **Singh M.** (1999) Site Selection and Characterisation for Landfills, Proc. National Workshop on Environmental Protection through Integrated Waste management ENPRO:IWM, 25-30th Oct 1999, Allahabad, India, 37-46.

xl. **Singh M.**, Rao K.S. and Ramamurthy T. (1998) A Simple Stress-Strain Curve For Jointed Block Mass, Proc. Indian Geotechnical Conference-1998, N. Delhi, 343-346.

xli. **Singh M.** (1998) Evaluation of Aquifer Parameters, Proc. Indian National Conference on Geoenvironment- Characterisation, Analysis, Design & Practice, 9-10 April, 1998, M.N.R. Engineering College Allahabad, India, IV 199-208.

xlii. **Singh M.**, Rao, K.S. and Ramamurthy T. (1997). Prediction of Strength of Jointed Rock Mass Based on Failure Mode, Proc. Indian Geotechnical Conference-1997, Vadodara, 139-142.

xliii. **Singh M.**, Rao, K.S. and Ramamurthy T. (1996). Engineering Response of Jointed Rock Like Materials, Proc. Indian Geotechnical Conference-1996, Madras, Dec. 11-14, 208-211.

xliv. Srivastava R.K., **Singh M.**, Yadav L. and Tiwari R.P. (1995) Geotechnical Evaluation of a Coal Mine Waste Rock, Proc. Indian Geotech. Conf.- 1995, 19-22 Dec, 1995, Bangalore, 57-61.

xlv. Srivastava R.K., **Singh M.**, Tripathi A.K. and Sahu A.K. (1995) Strength and Deformation Behaviour of Grout Jointed Indian Quartzite and Sandstones- A Laboratory Study, Proc. Conf. on Design and Construction of Underground Structures, 23-25 Feb, New Delhi, Eds. V.M. Sharma & KR Saxena, 163-171.

xlvi. Srivastava R.K., **Singh M.**, Agrawal V.K. and Sahu A.K. (1995) Evaluation of weatherability of Rock, Proc. Conf. on Design and Construction of Underground Structures, 23-25 Feb, New Delhi, Eds. V.M. Sharma & KR Saxena, 123-132.

xlvii. Srivastava R.K., **Singh M.** and Tripathi A.K. (1995) Strength and Deformation Behaviour of Grout Jointed Sandstone- A Laboratory Study, Proc. of the Int. Workshop on Rock Foundation, Yoshinaka and Kikuchi (eds.), 30th Sept, Tokyo, Japan, 363-366.

xlviii. **Singh M.**, Srivastava R.K. and Chandra S. (1994) Strength and Deformation Behaviour of Planar Multiple Jointed Grouted Quartzite Rock, Proc. Indian Geotechnical Conference 1994, 407-410.

xlix. Srivastava R.K, **Singh M.** and Tiwari R.P. (1994) Laboratory Study of Soil-Industrial Waste Water Interaction Behaviour, Proc XIII Int. Conf. on Soil mech. & Found. Engg, New Delhi, India, 1553-1556.

l. Srivastava R.K., **Singh M.**, Singh R. and Dwivedi A.K. (1994) A laboratory Evaluation of Planar Stepped and Berm Jointed Grouted Quartzite, Proc. The 1994 ISRM Int. Symp. Integral Approach to Applied Rock Mechanics, 10-14 May, 1994, Santiago, Chile.

li. Srivastava R.K. and **Singh M.** (1994) Software for Evaluation and Strength Prediction of Rocks Using Strength Criterion, Proc. CBIP Workshop Tunnelling India -1994, 23-25 Feb, Pune, India.

lii. Srivastava R.K, **Singh M.** and Joshi D.K. (1994) Geosynthetics: Engineering Material in Construction for Environmental Protection, Proc. All India Seminar on Economics and Management of Concrete Construction and its Maintenance, Feb. 24-25, 1994, Allahabad.

liii. **Singh M.**, Srivastava R.K. and Amir A.A. (1993) Use of Personal Computers in Strength Prediction for Rocks using Strength Criteria, Proc. All India Seminar on Computer Applications in Civil Engineering, 5-7 Feb., 1993, Institution of Engineers (India), Nagpur, 49-53.

liv. **Singh M.**, Sahu A.K., Srivastava R.K. and Tiwari R.P. (1992) Evaluation and Applicability of Strength Criteria for Rocks- Sandstones and Quartzites of Mirzapur Region, India, Proc. Asian Regional Symp. on Rock Slopes, Committee for ISRM (India) CBIP, New Delhi, 7-11 Dec, 1992, 117-124.

lv. Srivastava R.K., Jalota A.V., **Singh M.**, Tiwari R.P. and Singh B. (1992) Soil Fluid (Fertiliser Plant Effluent) Interaction Behaviour, Proc. Indian Geotechnical Conference 1992, 18-20 Dec, 1992, Calcutta, India, 501-504.

lvi. Srivastava R.K., **Singh M.**, Singh B. and Tiwari R.P. (1992) Geotechnical Aspects of Industrial Waste Water Disposal, Proc. All India Seminar on Protection of Fresh Water Bodies from Pollution, April 13 &14, 1992, The Institution of Engineers (India)Varanasi, India, 7-12.

lvii. Srivastava R.K., **Singh M.** and Tiwari R.P. (1992) Environmental Issues: Water Resources Development Project, Proc. All India Seminar on Protection of Fresh Water Bodies from Pollution, April 13 &14, 1992, The Institution of Engineers (India) Varanasi, India, 63-68.

lviii. **Singh M.**, Srivastava R.K. and Jalota A.V. (1991), A computer Program for estimation of aquifer parameters, Proc. Int. conf. on Rural Water Supply & Sanitation for Developing Countries, 4-7 January, 1992, Nagpur, India.

lix. Srivastava R.K., Jalota A.V., **Singh M.** and Singh Y.B. (1991) Strength and deformation Behaviour of Grout Filled Planar Jointed Vindhyachal Sandstone, Proc. Indian Geotechnical Conference 1991, 19-22 Dec, 1991, Surat, India.

lx. Srivastava R.K., Jalota A.V. and **Singh M.** (1991) Computers In Teaching of Geotechnical Engineering- Beginning of an Experience, Proc. of National Conference on Educational Technology for Higher Education and Training, M.A.C.T. Bhopal, 217-221.

lxi. Srivastava R.K., **Singh M.**, Singh R.B. (1991) Environmental Impact Assessment And Evaluation For Water Resources Projects, Proc. National Seminar on Recent Trends in Water Resources Engineering, Feb. 9, 1991, Dept. of Civil Engineering, IIT Kanpur.

lxii. **Singh M.**, Srivastava R.K. and Lakshaminarayana V. (1991) An Approach For Evaluation of Aquifer Parameters, Proc. National Seminar on Recent Trends in Water Resources Engineering, Feb. 9, 1991, Dept. of Civil Engineering, IIT Kanpur, D1-D13.

18. FEW SELECTED PUBLICATIONS