

**Dr. S. Mandal, Associate Professor, Dept of Civil Engg., IIT (BHU), Varanasi, U.P. 221 005**

**Academic Qualifications** (Matric onwards):

<b>Examination Passed</b>	<b>Board/ University</b>	<b>Division/ Grade</b>
High School	West Bengal Board of Secondary Examination	1 <sup>st</sup> (7 <sup>th</sup> Rank in West Bengal Board)
Higher Secondary	W. B. Council of Higher secondary Education	1 <sup>st</sup> (National Scholarship)
B.E. (Civil Engineering)	Jadavpur University, Kolkata – 32	1 <sup>st</sup> (3 <sup>rd</sup> rank in the class)
M.E. (Structural Engineering with diversification in Bridge Engineering)	University of Roorkee	1 <sup>st</sup> (1 <sup>st</sup> rank, University Medallist)

**Research Degree(s)**

<b>Degree</b>	<b>University</b>	<b>Title of the work</b>
Ph.D.	IIT Roorkee	Some aspects in numerical simulation of wind flow around bluff bodies

**Title of M. E. Thesis (own) :** Analysis of box girder bridges using 3-D curved shell elements.

**Title of PhD Thesis (Own) :** Some aspects of numerical simulation of wind flow around bluff bodies.

**List of M. Tech. Dissertation Supervised**

1. Analysis of plates using iso-parametric plate bending elements
2. Effect of reinforcement ratio or ductility and rotation capacity of Reinforced Concrete Beams
3. Relative performance of four noded and eight noded iso-parametric plate bending elements
4. Effect of opening in shear walls in Multi-storied Buildings
5. Buckling of thin plates subjected to in-plane loading
6. Prediction of Compressive strength by ANN
7. Estimation Equivalent Static Wind Load for tall buildings

8. Shear Lag Phenomenon in high rise structures
9. Analysis of transmission line towers under broken wire conditions
10. Effect of varying span on design of RC T-beam bridge deck and its elastomeric bearings
11. Wind loading on Reinforced concrete chimneys
12. Static analysis of suspension bridges using deflection theory
13. Analysis of frame structure building under blast load
14. Prestress in composite bridge
15. Shear-lag effect on corner modified frame tube structures
16. Yield line analysis of RC skew slabs
17. Thermal stress analysis of RC chimneys
18. Dynamic analysis of Box girder bridges
19. Yield line analysis of rectangular slabs by finite element method
20. Relative Influence of beam and column stiffness on SLP in high rise structures
21. Analysis of Diaphragm action in RC multi-storey buildings
22. Analysis of shear wall with openings
23. Comparison between classical method and FEM for T -beam bridges
24. Simulation of extreme wind climate of India with the aid of statistical and computational modeling

### **International Journals**

1. Mandal, S., Ojha, C. S. P., and Bhargava, P. (2001). "Significance of correlation coefficient in evaluating Reynolds Stresses." J. Wind Engineering, **Japanese Association for Wind Engineering**, 89(10), 317-320.
2. Ojha, C. S.P., Mandal, S., and Bhargava, P. (2001). "Aspects of Inlet boundary prescription for a turbulent flow field." J. Hydraulic Engineering, **ASCE**, 127(8), 694-700.

### **National Journal**

3. Mandal, S., Ojha, C. S. P., and Bhargava, P. (2005). "Wind turbulence modelling at near wall zone using k-epsilon model : A review." J. of Wind & Engng., Vol. 2, No.1, 52 – 59.

### **International Conference**

4. Mandal, S., Ojha, C. S. P., and Bhargava, P. (2001). "Significance of correlation coefficient in evaluating Reynolds Stresses." Fifth Asia-Pacific Conf. On Wind Engrg., Kyoto, October, 317-320.
5. Kumar, V., Kumar, R., Mandal, S. and Sinha, A.N., (2005), "*Admixtures for Underwater Concreting for Repair of Cracks in the Structure*", 30<sup>th</sup> Conference on Our World in Concrete & Structures", 23-24 August 2005, SINGAPORE, 305 - 310 .
6. Kumar, V., Kumar, R., Mandal, S. and Sinha, A.N., (2005), "*Use of Admixtures in Concrete: An Indian Scenario*", International Pre – conference Workshop, Our World in Concrete & Structures", 22<sup>nd</sup> August 2005, SINGAPORE, pp. 27 – 36 (published and presented).
7. Kumar, M., and Mandal, S. (1999). "Analysis of box girder bridges using finite element method." Proc. of Int. Conf. on Structural Engineering, Ghaziabad, Sept.1999, 479 – 492.

### **National Conference**

8. Mandal, S., Ojha, C. S. P., and Bhargava, P. (2002). "Numerical simulation of wind flow around buildings: Adoption of model constants." Proc. of National Wind Engineering, NCWE 02, April, 354-367.
9. Dam, S., and Mandal, S. (2003). "Retrofitting Structurally distressed bridges." Proc. of 18<sup>th</sup> Indian Engineering Congress, Lucknow, December, 376-381.
10. Mandal, S., Ojha, C. S. P., and Bhargava, P. (2004). "Wind turbulence modeling at near zone using k- $\epsilon$  model: A review" Proc. of National Conference on Wind Engineering, NCWE 04, 284 – 293.
11. Vihwal, V., and Mandal, S. (2004). "A parametric study on frame shear wall interaction under wind load." Proc. of National Conference on Wind Engineering, NCWE 04, pp. 83 – 90.
12. Kumar, V., Asha, K., and Mandal, S. (2004). "A study on properties of cement partially replaced by silica fumes", Proceedings of the All India seminar on 'Innovations in design and construction of Concrete Structures', 36 – 40.
13. Kumar, V., Ali, S., and Mandal, S. (2004). "Fly ash lime gypsum sand bricks versus fly ash lime cement sand bricks: a comparison", Proceedings of the All India seminar on 'Innovations in design and construction of Concrete Structures', 71– 74.

14. Gaurav, Mandal, S., Kumar, R. and Kumar, V., (2005), "Linear Deflection Analysis of Beam Using Genetic Algorithms", October 22, 2005, Indian Concrete Institute, U.P., Varanasi Centre, Institute of Technology, Banaras Hindu University, Varanasi, India, pp. 54 – 64.
15. Saha, R., Kumar, R., Mandal, S. and Kumar, V., (2005), "Cracks: Cure and Prevention", October 22, 2005, Indian Concrete Institute, U.P., Varanasi Centre, Institute of Technology, Banaras Hindu University, Varanasi, India, pp. 65 – 88.
16. Kumar, V., Kumar, R., and Mandal, S. (2006), "Retrofitting of Under Water Structures", *Proceedings of All India Seminar on Earthquake Resistant Design, Construction, Retrofitting and Rehabilitation of Buildings*. 18-19<sup>th</sup> Feb. 2006, IT BHU, Varanasi, pp. 159 – 166. (published and presented).
17. Kumar, D., Mandal, S. and Kumar, V. (2007). "Some aspects of estimation of equivalent static wind load on tall buildings.", Proc. of National Conference on Wind Engg (NCWE), 373 – 380, Chennai.
18. Kumar, D., and Mandal S. (2011). "Estimation of Gust effective factor using IS 875 (Part 3) – 1987 and modifications proposed by Prem Krishna (2002)." Proc. Recent Advances in Civil Engineering (RACE -2011), IIT (BHU), Varanasi, 360-364.
19. Mandal, S., and Kumar, D. (2012). "Estimation of ESWL using modifications proposed by Prem Krishna (2002)" Proceed. of 6th National Conf on Wind Engineering, CRRI, New Delhi, 14-15 Dec, 2012, pp. 227 - 236.
20. Jaiswal, M., and Mandal, S. (2012). "A parametric study of ESWL on RC chimneys" Proceed. of 6th National Conf on Wind Engineering, CRRI, New Delhi, 14-15 Dec, 2012, pp. 215 - 226
21. Jain, Y. K., and Mandal, S. (2012). "A case study on shear lag phenomenon in tubular structures under wind load" Proceed. of 6th National Conf on Wind Engineering, CRRI, New Delhi, 14-15 Dec, 2012, pp. 237 - 248.
22. Sarkar, A., Kumar, N., and Mandal, S. (2012). "Specification of design wind speed due to monsoon gale." Proceed. of 6th National Conf on Wind Engineering, CRRI, New Delhi, 14-15 Dec, 2012, pp. 415 - 426.
23. Singh, A., and Mandal, S. (2012). "A state of the art review on interference effect of structures subjected to wind loads" Proceed. of 6th National Conf on Wind Engineering, CRRI, New Delhi, 14-15 Dec, 2012, pp. 313 - 323.

## Proceedings

24. Mandal, S., (2004) "Proceedings of the All India seminar on 'Innovations in design and construction of Concrete Structures' (jointly edited by Chandrasekaran, S., and Singh, P.K.)

## **EXPERIENCE**

### **Industrial experience**

<b>Designation</b>	<b>Name of Employer</b>
Design Engineer (Civil)	Development Consultants Limited, Kolkata – 16
Assistant Surveyor of works	Military Engineer Services, Ministry of Defence, Govt. of India

### **Teaching experience**

<b>Designation</b>	<b>Name of Employer</b>
Lecturer in Civil Engg	Birla Institute of Technology and Science (BITS), Pilani
Lecturer in Civil Engg (Structural Engg.)	Institute of Technology Banaras Hindu University, Varanasi
Senior Lecturer (Structural Engg.)	Institute of Technology Banaras Hindu University, Varanasi
Reader in Civil Engg	Institute of Technology Banaras Hindu University, Varanasi
Associate Professor in Civil Engg.	Indian Institute of Technology (Banaras Hindu University), Varanasi

### **Projects/Consultancy handled**

- (i) "E-Content Development Project on Concrete Technology", (March, 2005), Kumar, V., Kumar, R. and Mandal, S, Awarded by Consortium for Educational Communication (An Inter University Centre of University Grants (UGC) Commission on Electronic Media), NSC Campus, Aruna Asaf Ali Marg, New Delhi -110067. **Financial Assistance: Rs. 1,02,000/- (Rupees one lakh two thousand only), Duration for Completion: One Year.**

- (ii) Building Centre has been constructed near to the Structural Engineering lab, Department of Civil Engineering, IT, BHU, Varanasi on March 2005 Varanasi. Sponsored by HUDCO, New Delhi. Financial Assistance: Rs. 500000/- (Rupees five lakh only), Duration for Completion: Five Year. Installment Financial Assistance for 1<sup>st</sup> year: Rs. 200000/- (Rupees two lakh only)

**Membership of** Institution of Engineers, India

**Professional bodies:** Indian Society for Wind Engineering

Institute for Steel Design & Growth (INSDAG)

Indian Concrete Institute

Indian Society of Earthquake Technology