

Dr. Bipul Talukdar
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Department of Civil Engineering
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Education

PhD from University of Roorkee, Roorkee (Now IIT Roorkee), Uttaranchal
ME from Assam Engineering College, Guwahati, Assam
BE from Jorhat Engineering College, Jorhat, Assam

Professional Experience

Teaching Experience :

1. Assistant/ Associate Professor in Civil Engineering Department of Assam Engineering College (From January 2000 continuing at present)
2. Assistant Professor in Civil Engineering Department of Jorhat Engineering College (From November 1997 to December 2000)
3. Lecturer in Civil Engineering Department of Jorhat Engineering College (From October 1992 to November 1997)
4. Lecturer in Civil Engineering Department of POWI, Jorhat (From March 1992 to September 1992)

Industrial Experience :

1. Worked as Engineer-in-charge in 15MLD Zoo Road Water Supply Scheme, Hengerabari Guwahati. Under Assam Urban Water Supply & Sewerage Board from 1989 to 1992.

Area of Specialization

Water Resources System Planning & Management

Research Interest

Water Resources Engineering
Watershed Management
Remote Sensing & GIS
Restoration & Management of Lakes and Rivers
River Bank Erosion
Concrete Technology and Construction Management.

Thesis Supervised

Twenty nine thesis of ME

Three thesis of PhD

Details of Sponsored / Consultancy Project Handled

1. Total 2.5 Lacs funded by AICTE titled "Explicit Consideration of Reliability in Multiobjective Stochastic Dynamic Programming Models for Reservoir Planning and Operation Problems".
2. Total 14.68 Lacs funded by AICTE titled "Evaluation of Scour Depth Around Bridge Piers".
3. Total 18.00 Lacs funded by AICTE titled "Mathematical Modeling of an Erosion Affected Reach of River Brahmaputra".
4. Total 5.00 Lacs funded by AICTE titled "Modernization of Computational Laboratory".
5. Total 12.50 Lacs funded by AICTE titled "Modernization of Environmental Engineering Laboratory".
6. Total 25 Lacs funded by MOWR titled "Evaluation of Master Plans made during 10th Plan".

Details of Research Publications

International/National Conference:

1. Talukdar B., Hazarika S.M., and Goswami M.D (2004). Determination of Conservation Practice Factor For A Rainfed Watershed, published in the International Conference on Advanced Modeling Techniques for Sustainable Management of Water Resources. Deptt. Of Civil Engg., NIT Warangal, 28-30 Jan, 2004.
2. Nath U.K. and Talukdar B. (2008). Influences of Workability in Concrete Mix-Design 14th Annual Convention and National Seminar on "Recent Trends in High Rise Buildings", Indian Building Congress, New Delhi, 2008 paper No. 9(i).
3. Nath U.K. and Talukdar B. (2009). Influence of Coconut Fiber on Compressive Strength of Concrete, National Conferences on Current Challenges in Civil Engineering, Velammal Engineering College, Chennai.
4. Deb Debasis, Talukdar Bipul (2009). Abstract on 'Effect of valley slope on the performance of Earth and Rock fill Dam, accepted and published at WSEAS conference held at Cambridge University during 24th to 26th Feb. 2009, U.K.
5. Nath U.K. and Talukdar B. (2010). Concrete Mix Design-Issues and Challenges", Proc. of 26th National Convention of Civil Engineers, The Institution of Engineers (India) , Assam State Centre, Guwahati, pp. 241-245.
6. Nath U.K., and Talukdar B. (2010). Concrete With Coconut Fiber : An Alternative Construction Material, Proc. of 26th National Convention of Civil Engineers, The Institution of Engineers (India) , Assam State Centre, Guwahati, pp. 311-314.

7. Nath U.K., Talukdar B., Nath R., Sarma M, Shyam B., Machahary P. (2010). A New Approach to Concrete Mix Design, National conferences on Disaster Mitigation in Housing in India: an Agenda for Future, IITR, Roorkee, pp. 231-238
8. Islam Sirajul and Talukdar Bipul (2012). Integrated Management of Ground Water with Artificial Recharge from Rainwater Harvesting for an Urban Water Supply System. International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012), IIT Guwahati, 24-26th Feb., 2012, Paper No. 289.
9. Talukdar Bipul and Das Ranjit (2015). Assessment of River Bank Erosion and Vulnerability of Embankment to Breaching: A RS and GIS Based Study in Subansiri River in Assam, India. Int. confe. on Climate Change and Water & Environment Management in Mosoon Asia, 28-30 January, 2015, Bangkok, Thailand.
10. Talukdar Bipul and Srivastava D.K. (2015). Conflict Resolution in Reservoir Operation Problems using Multiobjective Stochastic Dynamic Programming. 9th World Congress of European Water Resources Association (EWRA 2015), Water Resources Management in Changing World: Challenges and Opportunities, June 10-13, 2015, Istanbul, Turkey.
11. Choudhury N and Talukdar Bipul (2015). Reliability Based Simulation for Power Potential Study of a Hydroelectric Project. 9th World congress of European Water Resources Association (EWRA 2015), Water Resources Management in Changing World: Challenges and Opportunities, June 10-13, 2015, Istanbul, Turkey. This paper has been selected for Journal publication in International Water Utility Journal from EWRA.
12. Deka, M., and Talukdar, B. (2016). A Study of an Erosion-Affected Reach of the River Beki Using Mathematical Modeling. Proc. of World Environmental and Water Resources Congress 2016, ASCE, West Palm Beach, Florida, USA, May 22-26, 2016, pp 334-342.
13. Baid, A., Talukdar, B., and Das, R. (2016). Vulnerability Analysis of Embankment Reach: A Remote Sensing and GIS Based Study in Nona River in Assam, India. Proc. of International Conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, AEC, Guwahati, December 19-21, 2016, pp 44-48.
14. Rahman, S., and Talukdar, B., (2016). Hydrological modelling of Krishnai river basin. Proc. of International Conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, AEC, Guwahati, December 19-21, 2016, pp 233-237.
15. Barman, R., and Talukdar, B., (2016). Stability analysis of geobag revetment for riverbank protection. Proc. of International Conference on Civil Engineering for Sustainable Development – Opportunities and Challenges, AEC, Guwahati.
16. Talukdar, B., Baid, A., and Das, R. (2017). Indexing Vulnerability of an Embankment Reach against Breaching : A Remote Sensing and Hydrodynamic Based Study. Accepted at EWRA2017, 10th World Congress on Water Resources and Environment of European Water Resources Association to be held from 5-9 July, 2017, Athens, Greece.

ASCE Online Library Publication:

1. Deb Debasis and Talukdar Bipul (2010). Optimum Management of Land and Water Resources of a Water logged Area Using DP Model” presented in the conference titled

“World Environmental and Water Resources Congress, 2010” at Providence, Rhode Island, USA held during 16th May to 20th May 2010 and organized by ASCE & EWRI, pp-2619-2629.

2. Deb Debasis and Talukdar Bipul (2010). Remote Sensing and Geographic Information System for Assessment, Monitoring and Management of Flooded and Waterlogged Areas, North district of Tripura state, India, presented in the conference titled ‘Watershed 2010’, Innovations in Watershed Management under Land use and Climatic Change at Madison, Wisconsin, USA held during from 23rd Aug. to 27th Aug. 2010 and organized by ASCE & EWRI, pp-1013-1024.
3. Talukdar Bipul, Deb Debasis, and Srivastava D.K. (2011). Development of Multi-objective Reservoir Operation Model for Flood Control Benefit. Presented in the conference titled ‘World Environmental and Water Resources Congress, 2011’, held at Palm Springs, California, USA during 22nd May to 26th May 2011 and organized by the ASCE & EWRI, pp-3978-3989.
4. Deb Debasis, Talukdar Bipul and Srivastava D.K. (2011). Application of Remote Sensing and GIS Tools in Delineating Environmentally-delicate-Areas for Optimum Land Use Planning: A Case Study. Presented in the conference of World Environmental and Water Resources Congress, 2011, held at Palm Springs, California, USA during 22nd May to 26th May 2011 organized by ASCE & EWRI, pp-3862-3875.
5. Deb Debasis, and Talukdar Bipul (2012). Hydro-geomorphological Analysis of a Water Logged area of South Tripura District using RS and GIS Technology. Proc. of World Environmental and Water Resources Congress, 2012, Albuquerque, New Mexico, USA, 20-24 May 2012, organized by ASCE & EWRI.
6. Talukdar Bipul, Deb Debasis and Srivastava D.K (2012). Development of Multi-objective Stochastic Dynamics programming (MOSDP) Reservoir operation model. Proc. of World Environmental and Water Resources Congress, 2012, Albuquerque, New Mexico, USA, 20-24 May 2012, organized by ASCE & EWRI.

Referred Journal Publication:

1. Islam, S., and Talukdar, B. (2012). “Application of artificial immune system in optimization of reservoir operation.” *International Journal of Water Resources and Environmental Management*, vol. 3, no.2, pp. 241-254.
2. Islam, S., and Talukdar, B. (2014). “Crop yield optimization using genetic algorithm with the CROPWAT model as a decision support system.” *International Journal of Agricultural Engineering*, vol. 7, no.1, pp. 7-14.
3. Islam, S., and Talukdar, B. (2016). “A Linked Simulation-Optimization (LSO) Model for Conjunctive Irrigation Management using Clonal Selection Algorithm.” *Journal of the Institution of Engineers, India: Series-A*, vol.97, no.3, pp.181-189.

4. Islam, S., and Talukdar, B. (2016). "Performance Improvement of a Rainfall Prediction Model using Particle Swarm Optimization". *International Journal of Computational Engineering Research*, vol. 6, no. 7, pp. 39-42.
5. Kalita, T., and Talukdar, B., (2017). Establishment of Intensity-Duration-Frequency Formula for Precipitation in Puthimari Basin, Assam. *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 6 no.4.

Book Chapter

1. Islam, S., and Talukdar, B. (2016). "Water Supply System Planning by Artificial Groundwater Recharge from Rooftop Rainwater Harvesting" In: Sarma, A.K., Singh, V.P., Suresh, A.K., and Bhattacharjya, R.K. (Eds.), *Urban Hydrology, Watershed Management and Socio-Economic Aspects*. Springer International Publishing, Switzerland, pp. 145-159.

Invited Lecture :

1. "New Frontiers in Civil Engineering : Challenges and Opportunities in North East India" Key note presented on National Conference organised by Royal School of Engineering & Technology, 5-6 November, 2015.
2. "Quality Control and Non-destructive Testing of Concrete", Workshop on Quality Control organised by Meghalaya PWD (Building) in Collaboration with Road Research Laboratory (R&B), 13-14 May, 2016, Shillong, Meghalaya.
3. "Flood and Erosion Management in Brahmaputra Basin", Workshop on Thrust Areas of 100 days agenda of Honorable Chief Minister of Assam, 30-31 July, 2016, Guwahati.
4. "Flood and Erosion Management – Lessons Learned from Brahmaputra Basin" , Lead Talk in Workshop on Space Technology Inputs for Disaster Risk Reduction in North Eastern Region with Special Emphasis on Early Warning, Preparedness and Mitigation, March 16-17, 2017, North East Space Application Centre, Umiam, Shillong, Meghalaya.
5. "Hydrologic Modelling", Key note presented on National Conference on Hydrology and Watershed Management, 24-25 March, 2017, NIT Silchar.

Short Term Course Conducted

1. Coordinator, Refresher course on "Hydrology and Hydraulic Engineering" for Engineers of Water Resources Department of Govt. of Assam, from 4th to 14th June, 2013 at Assam Engineering College, Guwahati, Assam (sponsored by DHI (India) Water & Environment Pvt. Ltd., New Delhi.)
2. Coordinator, Doner sponsored training programme on "Mitigation of river bank erosion problems", 23 January - 3 February and 13 March 23 March, 2012 at Civil Engg. Deptt., IIT Guwahati.

Research and Development

Research Experience

1. Comparative study of various numerical methods of gradually varied flow profiles with laboratory data for non-prismatic channels.
2. Flood frequency analysis study using four different techniques for ten rivers of Assam and finding out the best method for a particular purpose.
3. Development of a software for determination of pressure and exit gradient of a weir on permeable foundation using Khosla's theory.
4. Development of a software for optimum utilization of water for tea gardens of Assam. Reliability or risk is one of the most important objectives of water resources management problems, and the concept of reliability of different releases in the reservoir release policy is not taken into account and its applications are very limited. Successfully applied the concept of reliability of different releases in reservoir release policy using a stochastic dynamic programming model.
5. Developed a new concept of multiobjective stochastic dynamic programming approach into reservoir operation problems.
6. Developed a new approach for solving simultaneous equations for large size water resources problems without eliminating the redundant equations.

Any Other Information

1. Worked as a member of the Expert Committee on *Brahmaputra Water Diversion by China*, constituted by the Government of Assam.
2. Editor of "Emerging Trends in Construction Technology : Challenges and Future Directions", Proc. of the 26th National Convention of Civil Engineers, Institution of Engineers (I), 9-10 October, 2010, Guwahati, Assam.
3. Editor of the Souvenir of World Water Day 2012, organized by Institution of Engineers (I), Assam State Centre, Guwahati on 22nd March, 2012.
4. Acted as Joint Organising Secretary and Editor of the Proceedings of International Conference on Sustainable Development – Opportunities & Challenges (CESDOC2016), 19-21 December, 2016, Guwahati, India.
5. Presently Member of the Expert Committee on *Flood and Erosion Protection of Majuli Island*, constituted by Government of Assam vide Govt. Notification no. WR(G)75/2016/1 dated 21st February, 2017.