



Curriculum Vitae

Dr. Haradhan Maity
Assistant Professor & HOD
Department of Mathematics
Rishi Bankim Chandra Evening College,
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General Information:

Date of Birth: 24th September, 1982
Father's Name: Bhanu Charan Maity
Nationality: Indian
Permanent Address:
Vill.-Ashariabandh, P.O- Amarshi,
P.S- Patashpur, Purba Medinipur,
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Educational Qualification:

- **Ph.D.** in **Applied Mathematics** (Specialization – Fluid Mechanics & Mathematical Modelling), 2015, [Indian Statistical Institute \(ISI\), Kolkata](#) (degree awarded by University of Calcutta). Date of submission of thesis: 20th August 2014. Award Date: 31st July 2015.
The title of thesis: Turbulence statistics of flow over obstacle marks: an experimental and theoretical study.
Supervisor: Professor B. S. Mazumder, [Indian Statistical Institute \(ISI\), Kolkata](#).
- **M.Sc.** in **Mathematics**, 2007, [Indian Institute of Technology \(IIT\) Kanpur](#), India.
- **B.Sc.** in **Mathematics (Honours)**, 2004, [Midnapore College](#), [Vidyasagar University](#), India.

Research Interests: Fluid Mechanics, Statistical Fluid Mechanics, Partial Differential Equations, and Numerical Methods.

Research & Teaching Experience:

- **Assistant Professor & HOD**, Department of Mathematics, Rishi Bankim Chandra Evening College, West Bengal State University, Naihati, North 24 Parganas, West Bengal, 743165, India (May, 2017 to till date).
- **D.S. Kothari Post-Doctoral Fellow**, Indian Institute of Science (IISc), Interdisciplinary Centre for Energy Research (ICER), and Department of Mechanical Engineering, Bangalore-560012, India (October, 2016 to April, 2017).
- **Post-Doctoral Fellow**, Tata Institute of Fundamental Research (TIFR), Centre for Applicable Mathematics, Bangalore-560065, India (February, 2016 to October, 2016).
- **Visiting Scientist & others**, Indian Statistical Institute (ISI), Physics & Applied Mathematics Unit, Kolkata-700108, India (August, 2015 to January, 2016).
- **Research Assistant Professor** (position offered immediately after PhD thesis submission) (on leave from the Indian Statistical Institute), The University of Tennessee at Knoxville (UTK), Department of Civil & Environmental Engineering, Knoxville, TN-37996, USA (spring semester, 2015).
- **Senior Research Fellow (SRF)**, Indian Statistical Institute (ISI), Physics & Applied Mathematics Unit, Kolkata-700108, India (August, 2010 to July, 2015).
- **Junior Research Fellow (JRF)**, Indian Statistical Institute (ISI), Physics & Applied Mathematics Unit, Kolkata-700108, India (August, 2008 to August, 2010).
- **Project Link-Junior Research Fellow**, Indian Statistical Institute (ISI), Physics & Applied Mathematics Unit, Kolkata-700108, India (November, 2007 to August, 2008).
- **Project Associate**, Indian Institute of Technology (IIT) Kanpur, National Information Centre of Earthquake Engineering, Kanpur-208016, India (July, 2007 to October, 2007).

Courses Taught:

- *Rishi Bankim Chandra Evening College, Naihati, West Bengal, India*
 - Probability & Statistics, Numerical Methods, Differential Calculus, Differential Equations, Linear Algebra, Real Analysis, Advanced Real Analysis, Integral Calculus, Abstract Algebra, Vector Algebra, LPP, Game Theory, Complex Analysis, Metric Space, Elements of Computer Science and Programming, and Analytical Dynamics.
- *TIFR Centre For Applicable Mathematics, Bangalore, India*
 - Numerical Computing with MATLAB (topics includes: solving nonlinear equations, solving a system of linear equations, curve fitting and interpolation, numerical differentiation, numerical integration, and differential equations (PDE & ODE)).

Academic Achievements:

1. Awarded **International Travel Grant** from Science and Engineering Research Board (SERB), DST, New Delhi, India to attend and delivered a lecture at the 4th International Symposium on Shallow Flows, Eindhoven University of Technology, The Netherlands, 2017.
2. Awarded **International Travel Grant** from Council of Scientific and Industrial Research, New Delhi, India to attend and delivered a lecture at the 4th International Symposium on Shallow Flows, Eindhoven University of Technology, The Netherlands, 2017.
3. Received **International Award** of worth **Euros €750** from the 4th International Symposium on Shallow Flows, Eindhoven University of Technology, The Netherlands, 2017.
4. Awarded **Dr. D. S. Kothari Postdoctoral Fellowship** in Mathematical Sciences from University Grants Commission, India to work at Indian Institute of Science (IISc), Bangalore, India, 2016.
5. Awarded **Post-Doctoral Fellowship** from Tata Institute of Fundamental Research (TIFR), Centre for Applicable Mathematics, Bangalore, India, 2016.
6. Received **Professor Gerhard Jirka Award** of worth **HK\$9000** from **IAHR: the Fluid Mechanics Committee**, Hong Kong University of Science & Technology, Hong Kong, 2014.
7. Received **International Travel Grant** from Indian Statistical Institute Kolkata, India to attend and delivered a lecture at the 4th Annual International Congress of Environment, Qingdao, China, 2014.
8. Received **International Travel Grant** from Indian Statistical Institute Kolkata, India to attend and delivered a lecture at the 10th International Conference on Hydro-science & Engineering, the University of Central Florida, USA, 2012.
9. Received **Senior Research fellowship** from Indian Statistical Institute Kolkata, India (2010 - 2015).
10. Received **Junior Research Fellowship** from Indian Statistical Institute Kolkata, India (2008 - 2010).
11. Received **Junior Research Fellowship** from Council of Scientific and Industrial Research, New Delhi, India (2007 - 2008).

12. Received **Short-Term Project Associate Fellowship** from the National Information Centre of Earthquake Engineering (NICEE), Indian Institute of Technology Kanpur, India, 2007.
13. Qualified in Written Exam with all India Rank **2nd** for Ph.D. Program in Physics and Applied Mathematics of Indian Statistical Institute (ISI), 2008.
14. Qualified in Written Exam with all India Rank **5th** for Ph.D. Program in Applicable Mathematics of Tata Institute of Fundamental Research (TIFR), 2007.
15. Qualified Graduate Aptitude Test in Engineering (**GATE**) in Mathematics, 2007.
16. Received **SBF Scholarship** from Indian Institute of Technology Kanpur, India (2005 - 2007).
17. Received **Merit Cum Means Scholarship** from Indian Institute of Technology Kanpur, India (2004 - 2005).
18. Qualified **JAM** (Joint admission test to Master of Science in Mathematics, Indian Institute of Technology), 2004.
19. Received **National Scholarship** (1999 - 2004).
20. Qualified in **Science Aptitude & Talent Search Test**, 1998-99 (West Bengal Branch) conducted by All India Science Teachers Association.

International / National Recognition:

- **Reviewer:** Journal of Shipping and Ocean Engineering, David Publishing Company, USA and International Journal of Sediment Research, Elsevier Publishers.
- Invited speaker at the **4th International Symposium on Shallow Flows**, Eindhoven University of Technology, The Netherlands, 2017.
- Selected to participate in the Gerhard Jirka Summer School on Environmental Fluid Mechanics: Modelling and its Role in Sustainable Development, Hong Kong University of Science & Technology, Hong Kong conducted by **International Association for Hydro-Environment Engineering and Research (IAHR)**; The Fluid Mechanics Committee, December 2014.
- Invited speaker at the **4th Annual International Congress of Environment-2014**, Qingdao, China, September 2014.
- Invited to participate in **River Flow 2014 – the 7th International Conference on Fluvial Hydraulics**, EPFL Lausanne, Switzerland conducted by **IAHR**, September 2014.
- Selected to deliver a lecture in the Master Class “Turbulence and Mixing Processes” in the **World Congress of fluvial hydraulics** conducted by **IAHR**, River Flow 2014, EPFL Lausanne, Switzerland, September 2014. It may be mentioned here that only 12 candidates were selected from all over the world, and I was privileged to be one of them.
- Invited to visit & deliver a lecture in the Department of Civil and Environmental Engineering at the **University of Florence**, Italy, September 2014.
- Invited to deliver a lecture at the **10th International Conference on Hydro-science & Engineering**, the University of Central Florida, USA, November 2012.
- Selected to participate in the **National Meet of Research Scholars in Mathematical Sciences**, Department of Statistics, University of Jammu, Jammu, India (Sponsored by SERB, DST), December 8-12, 2014.

Talks delivered in India and abroad:

- Department of Mathematics, IITDM Kancheepuram, India, February 2018.
- Department of Mathematics, IIT Bhilai, India, August 2017.
- Department of Mathematics, IIT Madras, India, June 2016.
- Department of Mathematical Sciences, IISER Mohali, India, March 2016.
- TIFR Centre for Applicable Mathematics, Bangalore, India, December 2015.
- Department of Aerospace Engineering and Applied Mechanics, Indian Institute of Engineering Science and Technology (IEST), Shibpur, India, July 2015.
- Engineering Mechanics Unit, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India, November 2014.
- The National Conference on Hydraulics and Water Resources (HYDRO-2011), SVNIT, Surat, India, December 2011.
- The 4th International Symposium on Shallow Flows, Eindhoven University of Technology, The Netherlands, 2017.
- Department of Civil & Environmental Engineering at the University of Tennessee, Knoxville, USA, February 2015.
- Gerhard Jirka Summer School 2014, Hong Kong University of Science & Technology, Hong Kong, December 2014.
- 4th Annual International Congress of Environment, China, September 2014.
- The 10th International Conference on Hydro-science & Engineering, University of Central Florida, USA, November 2012.

Attending Conferences / Summer Training:

- Advanced summer school on Hyperbolic Conservation Laws, TIFR Center for Applicable Mathematics, Bangalore, India, May 16, 2016 - June 04, 2016.
- Compact course on compressible Navier-Stokes equations, TIFR Center for Applicable Mathematics, Bangalore, India, May 2-14, 2016.
- The 4th International Symposium on Shallow Flows, Eindhoven University of Technology, The Netherlands, 2017.
- Gerhard Jirka Summer School 2014, Hong Kong University of Science & Technology, Hong Kong, December 13-20, 2014.
- 4th Annual International Congress of Environment, China, September 21-23, 2014.
- The 10th International Conference on Hydro-science & Engineering, University of Central Florida, USA, November 4-8, 2012.
- The National Conference on Hydraulics and Water Resources (HYDRO-2011), SVNIT, Surat, India, December 29-30, 2011.
- Differential Equations: Modelling, Analysis and Computation, Department of Applied Mathematics, University of Calcutta, India, March 2-3, 2011.

Details of Project Work:

- Mathematical modeling of peak ground acceleration in Indian Earthquakes, IIT Kanpur, India, 2007.
- Magic graphs, IIT Kanpur, India, 2006.
- Mathematical modeling in epidemiology, IIT Kanpur, India, 2006.

- Optimization for generalized reduced gradient method, IIT Kanpur, India, 2005.
- Nonlinear differential equations, Indian Statistical Institute Kolkata, India, 2005.

List of Courses Done at Ph.D. Level

- Computer Applications and Statistical Methods
- Research Methodology
- Fluid Mechanics
- Advanced Numerical Techniques
- Integral Equations
- Perturbation Theory
- Statistical Fluid Mechanics
- Time Series Analysis
- Computational Fluid Dynamics
- Advanced Differential Equations
- Boundary Layer Theory
- Environmental Fluid Mechanics

List of Courses Done at M.Sc. Level

- Linear Algebra
- Analysis -I (Real Analysis)
- Computer Programming in C and Data Structures
- Continuum Mechanics
- Mathematical Methods
- Topology
- Analysis –II (Measure Theory)
- Algebra- I (Modern Algebra)
- Principles of Numerical Computation
- Matrix Theory and Linear Estimation
- Optimization
- Complex Analysis
- Functional Analysis
- Ordinary Differential Equations
- Partial Differential Equations
- Linear Programming and Extensions (Operation Research)
- Probability & Statistics
- Data Structures & Algorithms
- Mathematical Modelling
- Graph Theory
- Tribology

Coding Skills: C, C++, Fortran-77, MATLAB, Mathematica, LaTeX, OriginLab, CurveExpert, SAS, Image-Pro Plus, ArcGIS, WinADV, Corel draw and Adobe Photoshop.

List of Publications

- **Refereed Publications**

1. **H. Maity** and B. S. Mazumder (2017). Prediction of plane-wise turbulent events to the Reynolds stress in a flow over scour-bed. [*Environmetrics, Wiley*](#) (Published), DOI: 10.1002/env.2442, **Impact Factor: 1.532.**
2. B. S. Mazumder and **H. Maity** (2017). Turbulent flow and its characteristics over submerged obstacle marks. [*River Sedimentation - Wieprecht et al. \(Eds\), Taylor & Francis, London*](#), pp-329-335. ISBN: 978-1-138-02945-3.
3. **H. Maity** and B.S. Mazumder (2014). Investigation of the impacts of coherent flow structures upon turbulence properties in regions of fluvial scour. [*River Flow 2014 – Schleiss et al. \(Eds\), Taylor & Francis, London*](#), pp-127-132. DOI: 10.1201/b17133-22, ISBN: 978-1-4987-0442-7, **Citations: 01.**

4. **H. Maity** and B.S. Mazumder (2014). Experimental investigation of the impacts of coherent flow structures upon turbulence properties in regions of crescentic scour. *Earth Surface Processes and Landforms, Wiley*, Vol. 39: 995-1013. DOI: 10.1002/esp.3496, ISSN: 1096-9837, **Impact Factor: 3.722, Citations: 26.**
5. **H. Maity** and B. S. Mazumder (2013). Conditional statistics of Reynolds shear stress over obstacle marks. *ISH Journal of Hydraulic Engineering, Taylor & Francis*, Vol. 19(3): 305-315. DOI: 10.1080/09715010.2013.809240, ISSN: 2164-3040. **Impact Factor: 0.158, Citations: 03.**
6. **H. Maity**, R. Dasgupta, B. S. Mazumder (2013). Evolution of scour and velocity fluctuations due to turbulence around cylinders. *Advances in Growth Curve Models, Springer Proceedings in Mathematics & Statistics, New York*, Vol. 46: 131-148, DOI: 10.1007/978-1-4614-6862-2_7, ISBN: 978-1-4614-6862-2, **Citations: 04.**
7. **H. Maity** and B. S. Mazumder (2012). Contributions of burst-sweep cycles to Reynolds shear stress over fluvial obstacle marks generated in a laboratory flume. *International Journal of Sediment Research, Elsevier*, Vol. 27: 378-387, DOI:10.1016/S1001-6279(12)60042-0, ISSN: 1001-6279, **Impact Factor: 1.659, Citations: 10.**
8. B. S. Mazumder, **H. Maity**, and T. Chadda, (2011). Turbulent flow field over fluvial obstacle marks generated in a laboratory flume. *International Journal of Sediment Research, Elsevier*, Vol. 26: 62-77, DOI: 10.1016/S1001-6279(11)60076-0, ISSN: 1001-6279, **Impact Factor: 1.659, Citations: 13.**
9. **H. Maity** (2018). Turbulent bursting in a scour hole, *Communicated*.
10. **H. Maity** (2018). Modeling of Reynolds-Averaged Navier-Stokes Equations for Turbulence, *Communicated*.
11. **H. Maity** (2018). Solutions of nonlinear wave equations, *Preparing the manuscript for submission*.

- **Proceedings of International Conferences:**

1. **H. Maity** and B.S. Mazumder (2017). Investigation of turbulent coherent motions in a scour hole. *4th International Symposium on Shallow Flows*, Eindhoven University Technology, Netherlands, 26 - 28 June 2017.
2. **H. Maity** and B.S. Mazumder (2015). Mechanics of chaotic coherent structures over fluvial scour due to turbulence around obstacles. *36th IAHR World Congress* (World Forum, The Hague, Netherlands), 28 June - 3 July, 2015.
3. **H. Maity** (2014). Influence of obstacle shape on the pattern of erosion and deposition in fluvial environments. *4th Annual International Congress of Environment-2014*, Qingdao, China, September 21-23, 2014, pp. 217.
4. **H. Maity** and B.S. Mazumder (2012). Coherent flow structures over scour marks generated by obstacles of different shapes. *10th International Conference on Hydro-science & Engineering*, University of Central Florida, USA, November 4-8, 2012, pp. 414-415.

- **Proceedings of National Conferences:**

1. **H. Maity** and B. S. Mazumder (2012). Conditional statistics of Reynolds shear stress over obstacle marks generated in a laboratory flume. *National Conference on Hydraulics, Water Resources, Coastal and Environmental Engineering*, IIT Bombay, India, December 7-8, 2012, pp. 533-544.
2. **H. Maity** and B.S. Mazumder (2011). Plane-wise conditional shear stress statistics over scour mark generated in a laboratory flume. *National Conference on Hydraulics and Water Resources*, SVNIT, Surat, India, December 29-30, 2011, pp. 517-524.

3. B.S. Mazumder, **H. Maity** and T. Chadha (2008). Turbulence statistics of flow in a scour hole around an obstacle. *National Conferences on Hydraulics, Water Resources and Environments*, NIT, Jaipur, India, December 15-16, 2008, pp. 499-505.

Language skills

- English: Proficient in reading, writing and speaking
- Bengali: Proficient in reading, writing and speaking
- Hindi: Proficient in speaking