

Dr. Rumpa Chakraborty

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Academic qualifications:

- Ph.D in Mathematics, Calcutta University, 2015
- M.Sc in Mathematics, Jadavpur University, 2008
- B.Sc in Mathematics, Burdwan University, 2006

Professional Experiences:

- 2016, December-till date, Assistant Professor, Diamond Harbour Women's University

Academic Experiences:

- 2015-2016 Dr. D. S. Kothari Postdoctoral Fellow, Jadavpur University
- 2009-2015 Research Scholar Indian Statistical Institute, Kolkata

Specialisation: Fluid Mechanics, Numerical Techniques.

Field of Research Interest:

- Fluid Mechanics
- Linear Water waves, propagation problems
- Integral Equations
- Numerical Techniques
- Boundary element method

Professional recognition, awards, fellowships received:

- 2015 UGC Dr. D.S. Kothari Postdoctoral Fellowship
- 2015 NBHM DAE Postdoctoral Fellowship
- 2014 CTS visiting fellowship in Indian Institute of Technology, Kharagpur.
- 2010 CSIR UGC -NET Fellowship in the subject Mathematical Sciences
- 2009 GATE Fellowship

Membership of learned Societies:

- Member of the Indian Mathematical Society, Pune, India.

List of Publications

Papers published in journals:

- Boundary element approach of solving Fredholm and Volterra integral equations. S Banerjea, **R Chakraborty**, A Samanta, Int. J. Mathematical Modelling and Numerical Optimisation .9(1)2019.
- Propagation of water waves over an asymmetrical rectangular trench
R Roy, **R Chakraborty**, BN Mandal, The Quarterly Journal of Mechanics and Applied Mathematics 70 (1), 49-64. 2017.
- Interaction of surface water waves with a vertical elastic plate: a hypersingular integral equation approach
R Chakraborty, A Mondal, R Gayen, Zeitschrift für angewandte Mathematik und Physik 67 (5), 115, 2016.
- Water wave scattering by a nearly circular cylinder submerged beneath an ice-cover
R Chakraborty, BN Mandal, J. Mar Sci. Appl. 14 (1), 69-75. 2015.
- Oblique wave scattering by a rectangular submarine trench
R Chakraborty, BN Mandal, The ANZIAM Journal 56 (3), 286-298. 2015.
- Water wave scattering by rectangular submarine trench.
R Chakraborty and B. N. Mandal, Journal of Engineering Mathematics 89 (1), 101-112. 2014.
- Scattering of water waves by a submerged thin vertical elastic plate.
R Chakraborty, BN Mandal, Archive of Applied Mechanics 84 (2), 207-217. 2014.
- Water wave scattering by an elastic thin vertical plate submerged in finite depth water
R Chakraborty, BN Mandal, J. Mar. Sci. Appl 12, 393-399. 2013.
- Water waves generated by instantaneous disturbances at the bed of a sloping beach
R Chakraborty, BN Mandal, Geophysical & Astrophysical Fluid Dynamics 107 (5), 481-496, 2013.
- The Cauchy Poisson problem for a sloping beach,
R Chakraborty and B. N. Mandal, International Journal of Applied Mathematics and Engineering Sciences. 2, (6), 145-163, 2012.
- Water wave scattering by an undulating bottom, B. N. Mandal and **R Chakraborty**
Bull. Cal. Math. Soc. 104, (6) 533-546, 2012.

Papers published in International Conference Proceedings:

- International Conference on Recent Advances in Mathematics & Applications.
Department of Mathematics, University of Burdwan, Burdwan-713104, West Bengal, India. January 13-15, 2010.
- INDO-US Bilateral Workshop-2010 on Sedimentation, Erosion, Flooding and Ecological Health of Rivers Organized by Indian Statistical Institute, Kolkata, India. November 1-3, 2010.

- International Conference on Non linear Dynamics, Analysis and optimization (ICNDAO 2015) organized by Department of Mathematics, Jadavpur University. December 9-11, 2015.

Paper presented in academic Seminar/Conference/Workshop with title of Papers:

- National Conferences on Recent Trends in Mathematical Modelling and Simulations (RTMMS-2010), Department of Applied Mathematics, Institute of Technology, BHU, Varanasi-221005, India. March 18-20, 2010.
- National seminar on mathematical modelling of natural Phenomena organized by Indian Society of Nonlinear Analysis (ISNA)., Bose Institute (main campus), Kolkata, India. October 29, 2010.
- National seminar on Differential Equations: Modelling, Analysis and Computation, Department of Applied Mathematics, University of Calcutta, Kolkata, India. March, 2-3, 2011.
- 56th Congress of the Indian Society of the Theoretical and Applied Mechanics (ISTAM). Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat. December 19-21, 2011
- Application of Mathematics in Industries and Technology Organized by Department of Mathematics, Sikkim Manipal Institute of technology, Majitar, East Sikkim-737136, India. December 06-11, 2012.
- National Seminar "Mathematics and Mathematical Sciences" Jointly Organized by Department of Applied Mathematics & Department of Pure Mathematics, University of Calcutta, Kolkata, India. December 27-28, 2012.
- 100th Indian Science Congress, Kolkata, India. September 23-28, 2013 National Programme on differential Equations: Theory, Computation & Applications (NPDE-TCA) Jointly Organized by Department of Applied Mathematics, University of Calcutta, Kolkata, India. January 3-7, 2013.
- 58th Congress of the Indian Society of the Theoretical and Applied Mechanics (ISTAM). Jointly Organized by Bengal Engineering and Science University, Shibpur, Howrah, West Bengal, India. December 18-21, 2013.
- National Conference on Mathematical and Theoretical Biology (NCMTB 2015) organized by Department of Mathematics, Jadavpur University. November 19-20, 2015.
- National Conference on Emerging Trends in Physics of Fluids & Solids (NCETPFS 2015) organized by Department of Mathematics, Jadavpur University. February 24-25, 2015.

- National Conference on Emerging Trends in Physics of Fluids & Solids (NCETPFS 2016) organized by Department of Mathematics, Jadavpur University. March 3-4, 2016.

Invited Talk in Seminars/Conferences:

One Day State Level Interdisciplinary Seminar on Women and Society: From the Past to the Future Organized by the Department of Philosophy & The Department of Sanskrit Belda College, Belda, West Bengal 721424.

Brief Summary of Research work:

Considering linearized theory of water waves, wave scattering and generation problems are analysed by using different mathematical techniques. Singular, Hypersingular integral equations are considered, which are involved in different physical problems (e.g. elasticity, crack, fluid mechanics problems). Boundary element methods, Finite element methods etc., numerical techniques are applied in different methods. Mathematica, Matlab, C++ computer programming languages are used to solve the problems.