

Curriculum Vitae

Dr. Santanu Raut

Department of Mathematics
Mathbhanga College
Mathabhanga, Cooch Behar-736146
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Current Position

Assistant Professor, Mathbhanga College

Courses Taught or Teaching

Course Instructor for B.Sc Mathematics (Hons and Program) Students, Mathbhanga College

- ▷ Theory of Real Analysis
- ▷ Ordinary and Partial Differential Equations
- ▷ Integration Theory
- ▷ Dynamical System
- ▷ Numerical Analysis
- ▷ Matlab And programing with C

General Information

- Home Address: *Vill: Tangenmari, P.O.: Rajarhat, Dist: Cooch Behar-736165, West Bengal*
- Language Known: *Bengali, English, Hindi*
- Gender: *Male*
- Nationality: *Indian*
- Religion: *Hinduism*
- Category: *General*

Education

- ◇ B.Sc, Mathematics (Hons) Physics and Chemistry
[A.B.N. Seal College, Cooch Behar, West Bengal](#)
- ◇ M.Sc (Mathematics)
[Department of Mathematics, University of North Bengal, West Bengal](#)
- ◇ Ph.D. in Mathematics
[Department of Mathematics, University of North Bengal, West Bengal](#)
Thesis title: *An introduction to scale free analysis and dynamical system*
Name of the Supervisor: *Prof. D P Datta*

Research Interest

- Scale free Analysis and Fractal space
- Fractional Calculus and its application
- Nonlinear Dynamics

Attained Workshops

- (1) Title: *Second SERC school on nonlinear dynamics (January 04 – 24, 2006)*
Organizer: *Department of Science and Technology (DST), Govt. of India*

(2) Title: *3 Day (29th – 31st August, 2016) Workshop on Latex*
Organizer: *Cooch Behar College, Cooch Behar, West Bengal, India*

(3) Title: *Hyperbolic Partial Differential Equations and Conservation Laws, 2016*
Organizer: *Department of Mathematics, University of Calcutta, West Bengal, India*

(4) Title: *Recent Advances In Modelling And Computational Techniques In Applied Mathematics, 2017*
Organizer: *Department of Mathematics, Indian Institute of Engineering Science and Technology, Shibpur, West Bengal, India*

(5) Title: *One Day Workshop on Recent Advances in Mathematics, 2018*
Organizer: *Department of Mathematics, Cooch Behar Panchanan Barma University, Cooch Behar, West Bengal, India*

(6) Title: *Global Initiative for Academic Networks, 2018*
Organizer: *Department of Mathematical Sciences, IIT(BHU), India*

Papers Presented in Seminar or Conference

(1) Seminar title: *Advance in Mathematics: Celebrating National Mathematical Year, 2012*
Organizer: *Department of Mathematics, University of North Bengal, Siliguri, West Bengal*
Title of Paper: [Scale Free ordinary Differential Equation: Novel Solutions](#)

(2) Seminar title: *Ramanujan Day Celebration, 2015*
Organizer: *Assam Academy of Mathematics and Department of Mathematics, Guwahati, India*
Title of Paper: [Formation of Cantor Set, Cantor Function using Golden Mean portion of Unity](#)

(3) Seminar Title: *National Seminar on Recent Developments in Mathematics and Its Applications, 2015*
Organizer: *Department of Mathematics, University of Kalyani, West Bengal, India*
Title of Paper: [Scale Free ordinary Differential Equation and Time Asymmetric infinitely Differentiable Novel Solution](#)

(4) Seminar Title: *Applications of Generalized Calculus in Physics and Applied Mathematics*, 2016

Organizer: *Jadavpur University and Indian Society of Nonlinear Analysis (Isna)*

Title of Paper: [Ultrametric Space and Cantor Set](#)

(5) Seminar Title: *Frontiers in Science and Technology towards National Development*, 2016

Organizer: *Acharya Brojendra Nath Seal College, Cooch Behar, West Bengal, India*

Title of Paper: [Scale Free ordinary Differential Equation and Cantor Set](#)

(6) Seminar Title: *Recent Advances in Basic Science*, 2016

Organizer: *Ishlampur College, Ishlampur, West Bengal, India*

Title of Paper: [Solution of Fractional Wave Equations by Fractional Characteristic Method](#)

(7) Seminar Title: *International Seminar on Topology, Analysis and Algebra (Istaa)-2017*

Organizer: *Department of Mathematics, University of North Bengal, West Bengal, India*

Title of Paper: [Analytical Solution of Generalized Fractional KdV Equation in Fractal Time Space](#)

(8) Seminar Title: *Contemporary Developments in Social and basic Sciences in Times of Global Crisis*, 2016

Organizer: *Surya Sen Mahavidyalaya, Siliguri, West Bengal, India*

Title of Paper: [Solution of Space Time Fractional KdV Burger Equation using Fractional Transformation](#)

(9) Seminar Title: *International Conference on Applied Nonlinear Analysis & Soft Computing*, 2021

Organizer: *Department of Mathematics, Gauhati University, Guwahati, Assam, India*

Title of Paper: [Shock solitary and periodic wave solution of the ion acoustic waves for nonextensive dusty Plasmas in the framework of Korteweg-de Vries-Burgers equation with forcing and damping term](#)

Papers Published in Journals

(1) Datta, D.P., Raut, S., The arrow of time, complexity and the scale free analysis, [Chaos, Solitons and Fractals](#), 2006, 28, p. 581 – 589

- (2) Raut, S., Datta, D. P., Analysis on Fractal set, [Fractals](#), 2009, 17, p. 45 – 52
- (3) Raut, S., Datta, D.P., Non-archimedean scale invariance and cantor sets, [Fractals](#), 2010, 18(1), p. 111118
- (4) Datta, D.P., Raut, S., Ultrametric Cantor sets and growth of measure, [P-Adic Numbers Ultrametric Anal. Appl.](#), 2011, 3, p. 7 – 22
- (5) Datta, D.P., Raut, S., Chaudhuri, A.R., Diffusion in a class of fractal sets, [Int. j. appl. math. stat.](#), 2012, 30(6), p. 3750
- (6) Ghosh, U., Raut, S., Sarkar, S., Das, S., Solution of space time fractional generalized KdV equation, KdV burger equation and Bona-Mahoney-Burgers equation with dual power-law nonlinearity using complex fractional transformation, [J. Math. Comput. Sci.](#) 2018, 8(1), p. 114 – 129
- (7) Kairi, R.R., RamReddy, Ch., Raut, S., Influence of viscous dissipation and thermo-diffusion on double diffusive convection over a vertical cone in a non-Darcy porous medium saturated by a non-Newtonian fluid with variable heat and mass fluxes, [Nonlinear engineering](#), 2018, 7(1), p. 6572
- (8) Mukharjee, A., Raut, S., Bagchi, Compactness and regularity via maximal open and minimal closed sets in topological spaces, [Scientific Studies and Research Series Mathematics and Informatics](#), (2018) Vol. 28(1) p 53 – 60
- (9) Mondal, K.K., Roy, A., Chatterjee, P., Raut, S., Propagation of Ion-Acoustic Solitary Waves for Damped Forced Zakharov Kuznetsov Equation in a Relativistic Rotating Magnetized Electron-Positron-Ion Plasma, [Int. J. Appl. Comput. Math.](#), 2020, 6(3), 55
- (10) Datta, D.P., Sarkar S., Raut, S., Novel Excitation of local fractional dynamics, [Nonlinear Studies](#), 2020, 27(4)
- (11) Ghosh, U., Ali, M. R., Raut, S., Sarkar, S., Das, S., D Alemberts solution of fractional wave equations using complex fractional transformation, [Nonlinear Sci. Lett. A](#), 2020, 9(4), p. 299 – 311
- (12) Raut, S., Mondal, K.K., Chatterjee, P., Roy, A., Propagation of dust-ion-

acoustic solitary waves for damped modified Kadomtsev-Petviashvili-Burgers equation in dusty plasma with a q -nonextensive nonthermal electron velocity distribution, [SeMA Journal, 2021,\(March\)](#)

(13) Ali, M. R., Raut, S., Sarkar, S., Ghosh, U., Unraveling the combined actions of a Holling type III predator-prey model incorporating Allee response and memory effects, [Comput. math. methods, 2021, 3\(2\), e1130](#)

(14) Kairi, R.R., Shaw, S., Roy, S., Raut, S., Thermosolutal Marangoni Impact on Bioconvection in Suspension of Gyrotactic Microorganisms over an Inclined Stretching Sheet. [Journal of Heat Transfer, 2021, 143\(3\), 031201](#)

(15) Raut, S., Mondal, K.K., Chatterjee, P., Roy, A., Two-dimensional ion-acoustic solitary waves obliquely propagating in a relativistic rotating magnetised electron-positron plasma in the presence of external periodic force, [Pramana - Journal of Physics, 2021, 95\(2\), 73](#)

(16) Saha, S., Biswas, P., Raut, S., Das, A.N., Convective heat transfer of laminar nano-fluids flow through a rectangular micro-channel with different types of baffle-corrugation, [Int. J. Comput. Methods Eng. Sci. Mech., March 2021](#)

(17) Roy, S., Saha, S., Raut, S., Das A. N., Studies on the effect of kinematic viscosity on electron-acoustic cylindrical and spherical solitary waves in a plasma with trapped electrons, [J. Appl. Math. Comput. Mech., 2021, 20\(2\), 65 – 76](#)

(18) Roy, S., Kairi, R.R. & Raut, S. Cylindrical and Spherical Dust-Ion-Acoustic Shock Solitary Waves by Korteweg-de Vries-Burgers Equation, [Braz J Phys \(2021\) 51\(4\)](#)

(19) Saha, S., Biswas, P., Raut, S., Das, A.N., Numerical simulations of turbulent air flow phenomena and characteristics of Heat transfer through a rectangular micro channel with mixed-type baffles, [Int. J. Fluid Mech. Res., 48\(3\) : 116 \(2021\)](#)

(20) Raut, S., Roy, S., Kairi, R. R., Chatterjee, Approximate Analytical Solutions of Generalized Zakharov-Kuznetsov and Generalized Modified Zakharov-Kuznetsov Equations, [Int. J. Appl. Comput. Math \(2021\) 7 : 157](#)

References

- (1) Prof. D P Datta, Fellow, The Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune-411007, Maharashtra, India
- (2) Prof. Prasanta Chatterjee, Department of Mathematics, Siksha Bhavana, Visva-Bharti University Santiniketan-731235, India
- (3) Shantanu Das, BARC-Mumbai, Trombay-400085, Maharashtra, India