PROF.(DR.) SAMIRAN GHOSH

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Department of Applied Mathematics
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Personal Information

Date of Birth	:	1^{st} February, 1971
Nationality	:	Indian
Gender	:	Male
Marital Status	:	Married
Languages Known	:	Bengali, English, Hindi

Academic Records

- Ph.D. (Sc.) (Nonlinear Plasma Dynamics), **2001**
  Title: Effect of dust charge variation on nonlinear wave propagation in a dusty plasma
  Jadavpur University, Kolkata, India.
- M.Sc. in Applied Mathematics, **1995**
  Specialization: Plasma Dynamics, Elective Paper: Dynamical Oceanography
  Department of Applied Mathematics, University of Calcutta, India.
- B.Sc. in Mathematics (Hons.), **1993**
  University of Calcutta, West Bengal, India.

Awards/Academic Achievements

- Scholarship (Max-Planck Institut für Extraterrestrische Physik, Garching, Germany) to attend the Sixth International Conference of Physics of Dusty Plasma -ICPDP6, Garmisch-Partenkirchen, Germany, 2011 (One Week).
- Scholarship (The Abdus Salam International Centre for Theoretical Physics (ICTP)) to attend the two weeks International Workshop on the Frontiers of Modern Plasma Physics, Trieste, Italy, 2008 (Two Weeks).
- Scholarship (Centro de Fisica dos Plasmas Instituto Superior Técnico Avenida Rovisco Pais, Lisboa Portugal) to attend the Fifth International Conference of Physics of Dusty Plasma -ICPDP5, Azores, Portugal, 2008 (One Week).
- Young Scientist Award (International Union of Radio Science (URSI)), 2002 (Two Weeks). The general assembly was held at Maastricht, the Netherlands.
- Qualified NET (National Eligibility Test) conducted by UGC-CSIR, 1999.
- National Scholarship (Department of Education, Govt. of West Bengal): i)Secondary Examination, 1987 & ii) B. Sc. (Hons.) Examination, 1993.

Teaching Experience

24.12.2014 - till date	Professor	Department of Applied Mathematics, University of Calcutta, Kolkata-700 009, West Bengal, India.
24.12.2011 - 23.12.2014	Associate Professor	Department of Applied Mathematics, University of Calcutta, Kolkata-700 009, West Bengal, India.
24.12.2008 - 23.12.2011	Reader	Department of Applied Mathematics, University of Calcutta, Kolkata-700 009, West Bengal, India.
16.09.2002 - 23.12.2008	Lecturer & Sr. Lecturer	Department of Basic Science, Government College of Engineering & Textile Technology, Berhampore, Murshidabad 742101, West Bengal, India.
01.08.2001 - 14.09.2002	Lecturer	Department of Basic Science, Netaji Subhas Engineering College, Garia Kolkata-700152, West Bengal, India.

Research Interests

- Nonlinear Wave Processes in Plasmas and Complex (Dusty) Plasmas
- Nonlinear Dynamics
- Stochastic Processes

Research Experience (National/International)

Year and Duration	**Assignments**	**Institutions**
2013, Two Weeks	Research Scientist (Visiting Senior Scientist in a Indo-South African bilateral Programme)	University of Western Cape, Cape Town, South Africa.
2006, Three Months	Research Scientist (Visiting Scientist in a Indo-South African bilateral Programme)	University of the Watersrand, Wits, Johannesberg, South Africa.
1996-2001, Five Years	Research Fellow(Jr. & Sr.) (Ph. D Research Work)	Centre for Plasma Studies, Department of Mathematics, Jadavpur University, India

Research Collaborations (International / National)

- Max Planck Institute (Max-Planck Institut für extraterrestrische Physik)
  Garching, Germany
- Ruhr Universität Bochum, Germany
- University of the Watersrand, Wits, Johannesberg, South Africa
- University of Western Cape, Cape Town, South Africa
- Departamento de Física, Universidade Federal do Paraná, Curitiba, Paraná, Brazil
- Institute for Plasma Research (IPR), Gandhinagar, Gujrat
- Saha Institute of Nuclear Physics (SINP), Kolkata
- Visva-Bharati University, Santiniketan
- Jadavpur University, Kolkata

Professional Recognitions

- Referee of Journals: (i) American Physical Society, (ii) American Institute of Physics, (iii) Cambridge University Press, (iv) Elsevier Science, (v) Springer-Verlag, (vi) Taylor & Francis, (vii) Institute of Physics, (viii) European Physical Society, (ix) Physical Society of Japan
- Convenor, Ph. D Research Advisory Committee, Department of Applied Mathematics, University of Calcutta (2025 -).
- Member, Ph. D Research Advisory Committee, Department of Applied Mathematics, University of Calcutta (2022-2025).
- External member, Board of Research Studies, Department of Mathematics, Diamond Harbour Women's University, Diamond Harbour, 24Parganas(S) (2018 -)
- Head, Department of Applied Mathematics, University of Calcutta (2022-2024).
- External member of Post Graduate Board of Studies of BKC College, Bonhooghly (under West Bengal State University).
- Member of Advisory and Organising Committee of several National and International Conferences

Member of Learned Societies

- Plasma Science Society of India (Life Member)
- Indian Association for the Cultivation of Science (Life Member), India
- Calcutta Mathematical Society (Life Member), India
- Institute of Theoretical Physics (Life Member), India
- Advanced Centre of Nonlinear and Complex Phenomena (Life Member), India

Post Doctoral Students

Name of Students	Year and University	Funding Agency
Dr. Sourav Pramanik	2017-2019, Calcutta University	National Post Doctoral Fellowship, DST-SERB, Govt. of India.
Dr. Sourav Pramanik	2019-2021, Calcutta University	Dr. D. S. Kothari Fellowship, UGC, Govt. of India
Dr. Anjana Sinha	2020-2023, Calcutta University	Women Scientist Fellowship, DST-SERB, Govt. of India.
Dr. Debjani Chatterjee	2021-2023, Calcutta University	National Post Doctoral Fellowship, DST-SERB, Govt. of India.

Ph.D Students(Registered/Thesis Submitted/Degree Awarded)

Name of Students	Year and University	Title of the Thesis
Arindam Mistri	2021, Calcutta University (Supervisor)	Analytical and computational aspects of some coherent structures in plasmas (**in progress**).
Suparna Sau	2025, Calcutta University (Jt. Supervisor)	A study of the effect of star formation history in different galaxies.
Akash Biswas	2025, Calcutta University (Supervisor)	Integrability of some nonlinear systems in plasma models.
Biplab Maity	2025, Calcutta University (Supervisor)	Some problems on nonlinear wave processes in a positive ion-negative ion plasma.
Arpita Shome	2024, Calcutta University (Supervisor)	Phase space analysis of some nonlinear problems in plasmas.
Debkumar Chakraborty	2023, Calcutta University (Supervisor)	Analytical and computational studies of some nonlinear wave processes in plasmas.

Saroj Kumar Mandal	2023, Calcutta University (Jt. Supervisor)	Impacts of stochastic noises on the stability of ecological systems.
Arnab Sikdar	2019, Jadavpur University (Jt. Supervisor)	Study of some problems on nonlinear wave processes in collisional pair ion plasmas.
Satyasaran Changdar	2018, Calcutta University (Jt. Supervisor)	Some problems on the nonlinear blood flow through stenosed arteries.
Ashish Adak	2017, Jadavpur University (Jt. Supervisor)	Study of some nonlinear coherent structures in pair ion plasmas.
Subrata Sarkar	2016, Jadavpur University (Jt. Supervisor)	Analytical and computational studies of collective phenomena in a dissipative dusty plasma.
Tushar Kanti Chaudhuri	2007, Jadavpur University (Jt. Supervisor)	Some problems of wave processes in dusty space plasma.

Projects

Duration	Amount and Funding Agency	Title of the Projects
Three Years (2017-2020)	20 Lakhs, CSIR, Govt. of India, Sanction no. 03(1384)/16/EMR-II	Time dependent nonlinear structures in plasmas in the frame work of Lagrangian fluid description. (Co-Investigator, JU)
Four Years (2009-2013)	15 Lakhs, CSIR, Govt. of India, Sanction no. 03(1125)/08/EMR-II	Studies of effects of dust charge variations on nonlinear collective phenomena in a dissipative dusty plasma. (Co-Investigator, JU)

Research Publications Profile

Google Scholar ID : https://scholar.google.com/citations?user=KFKEH5EAAAAJ&hl=en&oi=ao
Scopus ID : https://www.scopus.com/authid/detail.uri?authorId=35515919100
Orchid ID : https://orcid.org/0000-0002-8840-2148
Research Gate ID : https://www.researchgate.net/profile/Samiran-Ghosh-6
Peer Reviewed **SCI & SCI(E)** International Journals: **97**
Google Scholar: Total Citations: 2114 h-index: 24 i10-index: 53

Details of Publications

Year 2026

97. A. Biswas, A. Mistri, **Samiran Ghosh**, *Variational approach to the interaction dynamics of nonlinear compressional Alfvén waves and moving charged obstacle*, Journal of Fluid Mechanics, **1029**, A17, 2026 (Cambridge University Press, UK, **SCI**; Print ISSN: 00221120, 14697645, **HI-271, IF-3.9, Q1**). https://doi.org/10.1017/jfm.2026.11190

Year 2025

96. A. Mistri, D. Chakrabarty, **Samiran Ghosh**, *Modulated electrostatic ion cyclotron wave, spatiotemporal patterns, extreme events, and associated nonlinear electric field structures induced by a moving charged object*, Physical Review E, **112**, 035206-1- 035206-12, 2025 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325, IF-2.4, Q1**). https://doi.org/10.1103/dr2w-vc7k

95. D. Chakraborty, B. Maity, **Samiran Ghosh**, *Modulated wave dynamics and excitation of rational breathers in positive ion–negative ion collisional plasmas*, Communications in Nonlinear Science and Numerical Simulation, **143**, 108629-1-108629-14, 2025 (Elsevier BV, Netherlands **SCI**; Print ISSN: 1007-5704, Online ISSN: 1878-7274, **HI-143, IF-3.8, Q1**). https://doi.org/10.1016/j.cnsns.2025.108629

94. A. Mistri, A.Biswas, **Samiran Ghosh**, *Correction: 'Weakly nonlinear dynamics of magnetosonic wave at a critical angle excited by a moving charged object in collisional plasmas'*, Proceedings of Royal Society A, **481**, 1-2, 2025 (Royal Society, UK, **SCI**; Print ISSN: 13645021, Online ISSN: 1471-2946, **HI-162, IF-3.3, Q1**). https://doi.org/10.1098/rspa.2025.0357

Year 2024

93. A. Mistri, A.Biswas, **Samiran Ghosh**, *Weakly nonlinear dynamics of magnetosonic wave at a critical angle excited by a moving charged object in collisional plasmas*, Proceedings of Royal Society A, **481**, 1-16, 2024 (Royal Society, UK, **SCI**; Print ISSN: 13645021, Online ISSN: 1471-2946, **HI-162, IF-3.3, Q1**). https://doi.org/10.1098/rspa.2024.0202

92. A. Biswas, D. Chakraborty, **Samiran Ghosh**, *Three-dimensional nonlinear ion acoustic waves near critical density in magnetized negative ion plasmas*, Waves in Random and Complex Media, 1-19, 2024 (Taylor & Francis, UK, **SCI**; Print ISSN: 17455030, Online ISSN: 17455049, **HI-61, IF-4.051, Q2**). https://doi.org/10.1080/17455030.2024.2314138

Year 2023

91. A. Mistri, D. Chakraborty, **Samiran Ghosh**, *Nonlinear coherent structures of electrostatic ion cyclotron wave induced by a moving obstacle*, Physics of Fluids, **35**, 076103-1-076103-8, 2023 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070-6631, Online ISSN: 1089-7666, **HI-203, IF-4.1, Q1**). https://doi.org/10.1063/5.0155967

90. D. Chatterjee, A. P. Misra, **Samiran Ghosh**, *Neutrino magnetohydrodynamic instabilities in presence of two-flavor oscillations*, Physica Scripta, **98**, 045610-1-045610-10, 2023 (Institute of Physics, United Kingdom, **SCI**; ISSN: 00318949, **HI-97, IF-3.081, Q2**). DOI 10.1088/1402-4896/acc142

Year 2022

89. **Samiran Ghosh**, *Weakly nonlinear interactions of collective oscillations in a correlated degenerate fluid*, Waves in Random and Complex Media, **32**, 2849-2871, 2022 (Taylor & Francis, UK, **SCI**; Print ISSN: 17455030, Online ISSN: 17455049, **HI-61, IF-4.051, Q2**). https://doi.org/10.1080/17455030.2020.1866228

88. A. Shome, S. Pramanik, **Samiran Ghosh**, *Electron acoustic shock waves in nonisothermal dissipative plasmas*, European Physical Journal D (EPJD), **76**, 217-1-217-11, 2022 (EDP Sciences, Società Italiana di Fisica and Springer-Verlag GmbH Germany, Springer Nature, **SCI(E)**; Print ISSN: 1434-6060, Online ISSN: 1434-6079, **HI-99, IF-1.425, Q3**). https://doi.org/10.1140/epjd/s10053-022-00548-7

87. N. Chakrabarti, **Samiran Ghosh**, *Shock structure in collisional positive ion-negative ion plasmas*, Physica Scripta, **97**, 095603-1-095603-11, 2022 (Institute of Physics, United Kingdom, **SCI**; ISSN: 00318949, **HI-97, IF-3.081, Q2**). DOI 10.1088/1402-4896/ac8583

86. D. Chakraborty, A. Biswas, **Samiran Ghosh**, *Excitation of ion acoustic collisionless shock by a moving obstacle*, Physics of Plasmas, **29**, 122304-1-122304-11, 2022 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/5.0116134

85. A. Biswas, D. Chakrabarty, **Samiran Ghosh**, *Nonlinear electrostatic ion cyclotron wave collapse and formation of wave packets in the presence of trapped electrons*, Physical Review E, **106**, 055206-1-055206-7, 2022 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325, IF-2.4, Q1**). https://doi.org/10.1103/PhysRevE.106.055206

84. D. Chakrabarty, **Samiran Ghosh**, *Electrostatic electron plasma wave envelope with nonlinear Landau damping in nonthermal plasmas*, Waves in Random and Complex Media, 1-23, 2022 (Taylor & Francis, UK, **SCI**; Print ISSN: 17455030, Online ISSN: 17455049, **HI-61, IF-4.051, Q2**). https://doi.org/10.1080/17455030.2022.2063992

Year 2021

83. **Samiran Ghosh**, *Erratum: Homoclinic chaos in strongly dissipative strongly coupled complex dusty plasmas*, Physical Review E, **104**, 019901(E), 2021 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325, IF-2.4, Q1**). https://doi.org/10.1103/PhysRevE.104.019901

82. **Samiran Ghosh**, *Homoclinic chaos in strongly dissipative strongly coupled complex dusty plasmas*, Physical Review E, **103**, 023205-1-023205-7, 2021 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325, IF-2.4, Q1**). https://doi.org/10.1103/PhysRevE.103.023205

81. A. Biswas, D. Chakraborty, S. Pramanik, **Samiran Ghosh**, *Three dimensional wave group dynamics of ion acoustic waves in electron–positron–ion plasmas in the presence of an external uniform magnetic field*, Physics of Plasmas, **28**, 062105-1-062105-8, 2021 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/5.0053438

80. M. Ghosh, S. Pramanik, **Samiran Ghosh**, *Nonlinear coherent structures of electron acoustic waves in unmagnetized plasmas*, Physics Letters A, **396**, 127242-1-127242-5, 2021 (Elsevier BV, Netherlands, **SCI**; ISSN: 03759601, **HI-189, IF-2.3, Q2**). https://doi.org/10.1016/j.physleta.2021.127242

79. D. Chakrabarty, **Samiran Ghosh**, *Ion acoustic wave group dynamics near critical non-thermal parameter in non-thermal plasmas*, European Physical Journal D (EPJD), **75**, 44-1-44-12, 2021 (EDP Sciences, Società Italiana di Fisica and Springer-Verlag GmbH Germany, Springer Nature, **SCI(E)**; Print ISSN: 1434-6060, Online ISSN: 1434-6079, **HI-99, IF-1.425, Q3**). https://doi.org/10.1140/epjd/s10053-021-00041-7

Year 2020

78. A. Biswas, **Samiran Ghosh**, N. Chakrabarti, *Nonlinear structure formation of electron acoustic waves in plasmas*, Physica Scripta, **95**, 105603-1-105603-8, 2020 (Institute of Physics, United Kingdom, **SCI**; ISSN: 00318949, **HI-97, IF-3.081, Q2**). DOI 10.1088/1402-4896/abb05e

77. **Samiran Ghosh**, B. Maity, S. Poria, *Chaos in positive ion–negative ion magnetized plasmas*, Journal of Plasma Physics, **86**, 905860604-1-905860604-14, 2020 (Cambridge University Press, UK, **SCI(E)**; Print ISSN: 00223778, Online ISSN: 14697807, **HI-52, IF-2.5, Q1**). DOI: https://doi.org/10.1017/S0022377820001348

76. Z. Ehsan, M. M. Abbasi, **Samiran Ghosh**, M. Khan and M. Ali, *Shock waves in a rotating non-Maxwellian viscous dusty plasma*, Contributions to Plasma Physics (CPP), **60**, e202000030-1-e202000030-16, 2020 (Wiley-VCH GmbH, Weinheim, **SCI**; Print ISSN:0863-1042, Online ISSN:1521-3986, **HI-50, IF-1.6, Q3**). https://doi.org/10.1002/ctpp.202000030

Year 2019

75. **Samiran Ghosh**, *Nonlinear ion acoustic wave and group dynamics near critical density in a plasma with negative ion*, Journal of Physical Society of Japan (JPSJ), **88**, 074501-1-074501-11, 2019 (The Physical Society of Japan, Japan, **SCI**; Print ISSN: 0031-9015, Online ISSN: 1347-4073, **HI-143, IF-1.579, Q2**). https://doi.org/10.7566/JPSJ.88.074501

74. S. Pramanik, **Samiran Ghosh**, *Nonlinear characteristics of relativistic Pierce diodes in stationary state*, Physics of Plasmas, **26**, 113503-1-113503-8, 2019 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi: 10.1063/1.5124900

73. S. Jana, **Samiran Ghosh**, N. Chakrabarti, *Nonlinear density collapse in one-dimensional cold atomic gas*, Physica Scripta, **94**, 055210-1-055210-10, 2019 (Institute of Physics, United Kingdom, **SCI**; ISSN: 00318949, **HI-97, IF-2.6, Q2**). DOI 10.1088/1402-4896/ab0b2e

Year 2018

72. A. Sikdar, A. Adak, **Samiran Ghosh**, M. Khan, *Electrostatic wave modulation in collisional pair ion plasmas*, Physics of Plasmas, **25**, 052303-1-052303-8, 2018 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.4997224

71. M. Dutta, **Samiran Ghosh**, N. Chakrabarti, *Nonlinear coupling of Langmuir and electron acoustic waves in a viscous plasma*, Physics of Plasmas, **25**, 012103-1-012103-5, 2018 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.5005980

Year 2017

70. S. Jana, **Samiran Ghosh**, N. Chakrabarti, *Effect of electron inertia on dispersive properties of Alfven waves in cold plasmas*, Physics of Plasmas, **24**, 102307-1-102307-7, 2017 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.4994118

Year 2016

69. **Samiran Ghosh**, N. Chakrabarti, *Nonlinear electrostatic wave dynamics in a two dimensional quantum plasma*, Annals of Physics, **371**, 67-76, 2016 (Elsevier,USA, **SCI**; Print ISSN: 00034916, Online ISSN: 1096035X, **HI-115, IF-3.0, Q1**). https://doi.org/10.1016/j.aop. 2016.04.002

68. B. Bagchi, **Samiran Ghosh**, B. Pal, S. Poria, *Qualitative analysis of certain generalized classes of quadratic oscillator systems*, Journal of Mathematical Physics (JMP), **57**, 022701-1-022701-8, 2016 (American Institute of Physics, USA, **SCI**; Print ISSN: 00222488, Online ISSN: 10897658, **HI-122, IF-1.355, Q2**). DOI: https://doi.org/10.1063/1.4939486

67. S. Sarkar, A. Adak, **Samiran Ghosh**, M. Khan, *Ion acoustic wave modulation in a dusty plasma in presence of ion loss, collision and ionization*, Journal of Plasma Physics, **82**, 905820504-1-905820504-17, 2016 (Cambridge University Press, UK, **SCI(E)**; Print ISSN: 00223778, Online ISSN: 14697807, **HI-52, IF-2.5, Q1**). DOI: https://doi.org/10.1017/S0022377816000799

66. S. Jana, **Samiran Ghosh**, N. Chakrabarti, *Nonlinear coherent structure of Alfven wave in a collisional plasma*, Physics of Plasmas, **23**, 072304-1-072304-11, 2016 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.4958651

65. S. Poria, **Samiran Ghosh**, *Chaotic behaviour of collective ion dynamics in presence of an external static magnetic field*, Physics of Plasmas, **23**, 062315-1-062315-11, 2016 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.4954381

64. A. Adak, A. Sikdar, **Samiran Ghosh**, M. Khan, *Magnetosonic shock wave in collisional pair ion plasma*, Physics of Plasmas, **23**, 062124-1-062124-7, 2016 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.4954403

Year 2015

63. A. Adak, **Samiran Ghosh**, N. Chakrabarti, *Ion acoustic shock wave in a collisional equal mass plasma*, Physics of Plasmas, **22**, 102307-1-102307-6, 2015 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174, IF-2.0, Q1**). https://doi.org/10.1063/1.4933356

62. N. Chakrabarti, **Samiran Ghosh**, *Longitudinal dust acoustic solitary waves in strongly coupled complex (dusty) plasma* , Journal of Plasma Physics, **81**, 905810310-1-905810310-6, 2015 (Cambridge University Press, UK, **SCI(E)**; Print ISSN: 00223778, Online ISSN: 14697807, **HI-52, IF-2.5, Q1**). DOI: https://doi.org/10.1017/S0022377815000057

61. B. Maity, **Samiran Ghosh**, R. Bharuthram, *Nonlinear ion acoustic wave in a pair-ion plasma in a uniform weak magnetic field* , Physica Scripta, **90**, 045604-1-045604-7, 2015 (Institute of Physics, United Kingdom, **SCI**; ISSN: 00318949, **HI-97, IF-2.6, Q2**). DOI 10.1088/0031-8949/90/4/045604

Year 2014

60. **Samiran Ghosh**, *Quasi-longitudinal soliton in a two-dimensional strongly coupled complex dusty plasma in the presence of an external magnetic field*, Physical Review E, **90**, 033108-1-033108-9, 2014 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325, IF-2.4, Q1**). https://doi.org/10.1103/PhysRevE.90.033108

59. **Samiran Ghosh**, N. Chakrabarti, *Nonlinear wave collapse, shock, and breather formation in an electron magnetohydrodynamic plasma* , Physical Review E, **90**, 063111-1- 063111-7, 2014 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325, IF-2.4, Q1**). https://doi.org/10.1103/PhysRevE.90.063111

58. **Samiran Ghosh**, N. Chakrabarti, F. Haas, *New nonlinear structures in a degenerate one-dimensional electron gas*, Euro Physics Letters (EPL), **105**, 30006-1-30006-5, 2014 (Institute of Physics, UK, **SCI**; ISSN: 1286-4854, **HI-174**, **IF-2.0, Q2**). DOI 10.1209/0295-5075/105/30006

57. **Samiran Ghosh**, A. Adak, M. Khan, *Dissipative solitons in pair-ion plasmas*, Physics of Plasmas, **21**, 012303-1-012303-6, 2014 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174**, **IF-2.0, Q1**). https://doi.org/10.1063/1.4862033

56. A. Adak, **Samiran Ghosh**, N. Chakrabarti, *Rayleigh-Taylor instability in an equal mass plasma*, Physics of Plasmas, **21**, 092120-1-092120-3, 2014 (American Institute of Physics, USA, **SCI**; Print ISSN: 1070664X, Online ISSN: 10897674, **HI-174**, **IF-2.0, Q1**). https://doi.org/10.1063/1.4896714

Year 2013

55. **Samiran Ghosh**, N. Chakrabarti, *Shock wave structure in dissipative quantum plasma*, Physical Review E, **87**, 033102-1-066408-5, 2013 (American Physical Society, USA, **SCI**; Print ISSN: 2470-0045, Online ISSN: 2470-0053, **HI-325**, **IF-2.4, Q1**). https://doi.org/10.1103/PhysRevE.87.033102

54. **Samiran Ghosh**, N. Chakrabarti, *Magnetic electron drift solitons in electron magnetohydrodynamic plasmas*, Plasma Physics and Controlled Fusion, **55**, 035008-1- 035008-8, 2013 (Institute of Physics, UK, **SCI**; ISSN: 1361-6587, **HI-120**, **IF-2.1, Q1**). DOI 10.1088/0741-3335/55/3/035008

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- Lecture Series on Fluid Mechanics (2026), Indian Statistical Institute Kolkata, Kolkata, India.
  Title: *Interaction of modulated electrostatic ion cyclotron wave and moving space debris: Spatio-temporal patterns and extreme events related to wave burst electric field*
- Refresher Course in Innovations through Mathematics: Practical Insights and Applications (2025), UGC-Malviya Mission Teacher Training Centre(MMTTC) (Erstwhile named HRDC), University of Rajasthan, Jaipur, India.
  Title: *Nonlinear Wave, Wave Breaking and Soliton Formation with Applications in Plasmas*
- Contemporary Research in Theoretical & Applicable Mathematics (CRTAM) 2025, The Bhawanipur Education Society College, Kolkata, India.
  Title: *A pedestrian's approach to nonlinear wave and wave breaking with applications*
- 3rd International Conference on Applied Mathematics in Science and Engineering (AMSE-2024), Siksha 'O' Anusandhan (Deemed to be University), Bhubaneswar, Odisha, India.
  Title: *Electrostatic ion cyclotron solitary wave collapse and wave packet formation in presence of trapped electrons*
- Workshop on Emerging Areas in Mathematics (WEAM-2021), Calcutta Mathematical Society, Kolkata, India.
  Title: *Introduction to stochastic differential equations*
- Workshop on Advanced Mathematics (WAM-2019), Calcutta Mathematical Society, Kolkata, India.
  Title: *Wave breaking, dispersion and stable structures*
- Prof. P. P. Chatterjee Memorial Lecture, St. Paul's C M College (2018), Kolkata, India.
  Title: *Solitary waves in plasmas: An overview*
- DST-SERB School on "Plasma Theory" (2016), Institute of Advanced Study in Science and Technology, Paschim Boragaon, Guwahati, Assam, India.
  Title1: *Collective Modes in a Dusty Plasma*
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- National Conference on Computational Mathematics and Nonlinear Dynamics (CMND-2016), Department of Mathematics, Siksha Bhavana, Visva-Bharati
- 30th Symposium on Plasma Science & Technology (Plasma 2015), Saha Institute of Nuclear Physics, Kolkata, India.
- International Conference of the Physics of Dusty Plasma (ICPDP 2014), University of Delhi, New Delhi, India
- National Symposium on nonlinear and complex phenomena (2014), Jadavpur University, Jadavpur, Kolkata, India.
  Title: *Dynamics of stochastic dust charge fluctuations*
- National Seminar on Recent Perspective on Nonlinear Mathematics and its Applications (2014), Department of Mathematics, Siksha Bhavana, Visva-Bharati.
  Title: *Quasi-longitudinal dust lattice shock waves in a strongly coupled dusty plasma*
- Special Lecture on "Plasma MHD Theory" for Post-Graduate Students (2014), Department of Physics, University of Gour Banga, Malda, West Bengal, India
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- UGC Sponsored National Seminar on "Plasma Science and Technology"(2013), Department of Physics, Nabajyoti College, Kalagachia, Assam, India.
  Title: *Basic collective modes in dusty plasma*
- National Workshop on Nonlinear Waves: Theory and Simulation (2013), National Institute of Technology, Durgapur, India
- Workshop on "fluctuations phenomena in plasmas" (2013), Department of Physics, University of Western Cape, Cape Town, South Africa
- Special Lecture on "Plasma Waves and Instabilities" for Post-Graduate Students (2013), Department of Physics, University of Gour Banga, Malda, West Bengal, India
- Training Courses on "Techniques for solving ordinary differential equations" for post graduate students (2013), Calcutta Mathematical Society, West Bengal
- Training Courses on "Markov processes and its applications" for post graduate students, (2013), Department of Applied Mathematics, University of Calcutta
- UGC Sponsored Refreshers Course (2012), Department of Applied Mathematics, University of Calcutta, Kolkata, India
- Special Lecture on "Nonlinear Differential Equations" for Post-Graduate Students (2011-2013), Post-Graduate Unit, Bethune College, West Bengal, India
- Special Lecture on "Linear Wave Theory" for the Post-Graduate Student (2012-2013), Post-Graduate Unit, Motijheel College, Dumdum, West Bengal, India
- International Conference on Complex Processes in Plasma (2012), Institute for Plasma Research, Gandhinagar, Gujrat, India
- Micro-Conference on nonlinear Phenomena, Department of Mathematics(2012), Dibrugarh University, Assam, India.
  Title: *Dissipative bright and dark solitons in electronegative dusty plasma*
- Training Courses on "Green's function technique" for post graduate students (2012), Calcutta Mathematical Society, West Bengal, India
- DST-SERB School on "Theory of Plasma Waves and Instabilities" (2011), Institute of Advanced Study in Science and Technology, Paschim Boragaon, Guwahati, Assam.
  Title: *Theory of Dusty plasma (unmagnetized case)*