

Curriculum Vitae

◆ Personal Details:

- **Name:** Prof. BISWAJIT SAHU
- **Designation:** Professor

• Address for Communication:

Department of Mathematics
West Bengal State University, Barasat
Kolkata – 700 126, INDIA
Mobile : +919434317727
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- **Teaching Experience:** 19 years
- **Specialization:** Plasma Dynamics
- **Courses Taught:** Nonlinear Differential Equations and Dynamical Systems, Plasma Dynamics, Continuum Mechanics, Fluid Dynamics, Integral Transforms, Integral Equations, Numerical Analysis with Computer Programming, Operations Research, Graph Theory.

◆ Areas of Research interest:

Theoretical Plasma Physics, Nonlinear waves in Plasma, Dynamical system.

◆ Education:

- Ph.D (Sc.), Jadavpur University, India, 2007.
- M. Sc. in Applied Mathematics, Department of Applied Mathematics, University of Calcutta, 1999.

◆ Professional History :

07.01.2019 – Present

- Place: West Bengal State University, Barasat, Kolkata, India
- Position: Professor in Mathematics

07.01.2016 – 06.01.2019

- Place: West Bengal State University, Barasat, Kolkata, India
- Position: Associate Professor in Mathematics

04.03.2009 –06.01.2016

- Place: West Bengal State University, Barasat, Kolkata, India
- Position: Assistant Professor in Mathematics

07.01.2004 – 03.03.2009

- Place: Dinhata College, Coochbehar, West Bengal, India.
- Position: Lecturer in Mathematics

10.08.2001 – 06.01.2004

- Place: Indian Statistical Institute, Kolkata, India.
- Position: Research Scholar

◆ Awards :

- Graduate Aptitude Test in Engineering (GATE) - 2000, India for M.Tech./Research fellowship.
- Research Fellowship award - 2001 by Indian Statistical Institute, Kolkata, India.
- National Eligibility Test (NET) - 2001 for CSIR (Council of Scientific and Industrial Research)- UGC (University Grant Commission) research fellowship award in India.

◆ Doctoral Guidance :

- Completed: 01
- Thesis Submitted : 01
- Ongoing: 03

◆ Professional Recognitions :

- Review Editor of Frontiers in Physics (Sec: Low-temperature Plasma Physics) since 2022.
- Referee of Several International and National Research Journals.

◆ Project Completed :

UGC Minor Research Project entitled “Nonlinear waves in planar and nonplanar geometry in plasma” (UGC Reference No. : F. PSW-051/07-08(ERO)).

◆ Academic Memberships:

- Plasma Science Society of India (Life Member)
- Indian Statistical Institute (Life Member)
- Advanced Centre for Nonlinear and Complex Phenomena, Kolkata (Life Member)

◆ Conference/Workshop Attended : 08**◆ Conference/Workshop Presentation : 14****◆ Invited Lectures : 02****◆ Orientation programme/ Refresher Course Attended : 03**

◆ University/Departmental Activities :

- In Charge of Head of the Department of Mathematics, West Bengal State University (11.12.2017-05.04.2021)
- Worked as Convener of Board of Research Studies, Chairperson of UG Board of Studies, Department of Mathematics, West Bengal State University (11.12.2017-05.04.2021)
- Worked as Subject Expert in CAS
- Ex-Member of Court, West Bengal State University
- Ex-Member of Executive Council, West Bengal State University
- Conducted National Seminar on “Analysis & Applications: Celebrating 100 years of the General Theory of Relativity” organized by Department of Mathematics, West Bengal State University from March 10-11, 2016 as Joint-Convener.
- Conducted National Webinar on “Recent Advances in Mathematics”, organized by Department of Mathematics, West Bengal State University on 24th August, 2020 as Convener.
- Conducted National Webinar on “Mathematical Modeling: Theory and Applications”, organized by Department of Mathematics, West Bengal State University on 28th August, 2020 as Convener.

◆ Research Publications:

1. Rabindranath Maity and **Biswajit Sahu** : “Nonlinear Wave Structures of Electron Acoustic Waves in Nonextensive Magnetized Electron–Positron–Ion Plasmas”, *Plasma Physics Reports*, **48**, 305 (2022).
2. Shubhra Bhowmick and **Biswajit Sahu** : “Dissipative dust acoustic solitons in magnetized nonextensive warm dusty plasma”, *Chinese Journal of Physics*, **77**, 1029 (2022).
3. Shubhra Bhowmick and **Biswajit Sahu** : “Propagation of nonlinear excitations of dust acoustic waves by a moving charged object in superthermal plasmas”, *Indian Journal of Physics*, **96**, 3023 (2022).
4. Shubhra Bhowmick, Nabakumar Ghosh and **Biswajit Sahu** : “Dissipative electrostatic wave modulation in warm multi-ion dusty plasmas with superthermal electrons”, *Zeitschrift für Naturforschung A*, **77**, 421 (2022).
5. Rabindranath Maity and **Biswajit Sahu** : “Nonlinear excitations and dynamic features of dust ion-acoustic waves in a magnetized electron–positron–ion plasma”, *Zeitschrift für Naturforschung A*, **76**, 1077 (2021).

6. Shubhra Bhowmick and **Biswajit Sahu** : “Chaos and nonlinear excitations of dust acoustic waves in presence of external magnetic field with nonthermal species”, *Eur. Physical Journal D*, **75**, 273 (2021).
7. Rabindranath Maity, **Biswajit Sahu**, Swarup Poria : “Non-linear behaviour of electron acoustic wave dynamics in a magnetized plasma with non-thermal hot electrons”, *Contributions to Plasma Physics*, **61**, e202100040, (2021).
8. Debasish Roy, Naba Kumar Ghosh and **Biswajit Sahu** : “Nonlinear modulation of quantum electron acoustic waves in a Thomas– Fermi plasma”, *Indian Journal of Physics*, **95**, 2479 (2021).
9. Anjana Sinha and **Biswajit Sahu** : “Dust-Ion-Acoustic waves in unmagnetized 4-component plasma”, *Advances in Space Research* **67**, 1244 (2021).
10. Shubhra Bhowmick and **Biswajit Sahu** : “Propagation properties of dust-electron-acoustic waves in weakly magnetized dusty nonthermal plasmas”, *Contributions to Plasma Physics*, **61**, e202000091 (2021).
11. Debasish Roy and **Biswajit Sahu** : “Excitation of electrostatic plasma waves by a moving charged source in a quantum plasma”, *Advances in Space Research*, **67**, 1039 (2021).
12. Debasish Roy and **Biswajit Sahu** : “Influence of varying magnetic field on nonlinear wave excitations in collisional quantum plasmas”, *Zeitschrift für Naturforschung A* **75**, 913 (2020).
13. Pinki Shome, **Biswajit Sahu** and Swarup Poria : “Nonlinear dynamics of ion-acoustic waves in quantum plasmas with exchange-correlation effects”, *Zeitschrift für Naturforschung A*, **75**, 677 (2020).
14. Debasish Roy and **Biswajit Sahu** : “Nonlinear dissipative wave structures in planar and nonplanar geometry with quantum electron exchange-correlation potential”, *Chinese Journal of Physics*, **68**, 330 (2020).
15. Debasish Roy and **Biswajit Sahu** : “Electron-exchange potential correction on dynamics of multidimensional ion acoustic waves in quantum plasmas”, *Physics of Plasmas*, **27**, 062305 (2020).
16. Debasish Roy and **Biswajit Sahu** : “Dynamical behaviour of non-linear quantum ion acoustic wave in weakly magnetized electron–positron–ion plasma”, *Contributions to Plasma Physics*, **60**, e201900072 (2020).
17. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : “Ion-acoustic waves in dense magneto-rotating quantum plasma”, *Physics of Plasmas*, **26**, 072119, (2019).

18. Naba Kumar Ghosh and **Biswajit Sahu** : “Nonlinear Dispersive and Dissipative Electrostatic Structures in Two-Dimensional Electron-Positron-Ion Quantum Plasma”, *Communications to Theoretical Physics*, **71**, 237 (2019).
19. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : “Electron acoustic waves in a 2-electron, dissipative, quantum magneto plasma”, *European Physical Journal Plus*, **133**, 360 (2018).
20. **Biswajit Sahu** : “Nonplanar ion acoustic waves in collisional quantum plasma”, *Physica A*, **509**, 162, (2018).
21. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : “Dissipative nonlinear waves in a gravitating quantum fluid”, *European Physical Journal Plus*, **133**, 51 (2018).
22. **Biswajit Sahu** and Debasish Roy : “Nonlinear quantum ion acoustic shock wave dynamics with exchange-correlation effects”, *Advances in Space Research*, **61**, 1425 (2018).
23. **Biswajit Sahu** : “Nonplanar dissipative ion acoustic waves in electron-ion plasmas”, *Euro Physics Letters (EPL)*, **120**, 45001 (2017).
24. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : “Weak dissipative ion-acoustic solitons in relativistically degenerate collisional plasma”, *Physics of Plasmas*, **24**, 112111, (2017).
25. **Biswajit Sahu** and Debasish Roy : “Planar and nonplanar electron acoustic solitons in dissipative quantum plasma”, *Physics of Plasmas*, **24**, 112705, (2017).
26. Debjit Dutta and **Biswajit Sahu** : “Nonlinear Structures in an Ion-Beam Plasmas Including Dust Impurities with Nonthermal Nonextensive Electrons”, *Communications to Theoretical Physics*, **68**, 117 (2017).
27. **Biswajit Sahu** and A.P. Misra : “Magnetohydrodynamic shocks in a dissipative quantum plasma with exchange-correlation effects”, *European Physical Journal Plus*, **132**, 316 (2017).
28. Debjit Dutta and **Biswajit Sahu** : “Nonlinear features of electrostatic waves in a plasma with nonthermal-Tsallis distributed electrons”, *Physics of Plasmas*, **23**, 062313, (2016).
29. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : “Dispersive and dissipative nonlinear structures in degenerate Fermi–Dirac Pauli quantum plasma”, *Advances in Space Research*, **58**, 1146 (2016).
30. **Biswajit Sahu**, Barnali Pal, Swarup Poria and Rajkumar Roychoudhury: “Nonlinear dynamics of ion acoustic waves in quantum pair-ion plasmas”, *Journal of Plasma Physics*, **81**, 905810510 (2015).

31. Saliha Mayout, **Biswajit Sahu**, and Mouloud Tribeche : "Time evolution of nonplanar dust ion-acoustic solitary waves in a charge varying dusty plasma with superthermal electrons", *Physics of Plasmas*, **22**, 123703, (2015).
32. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : "Nonlinear dynamics of cold magnetized non-relativistic plasma in the presence of electron-ion collisions", *Physics of Plasmas*, **22**, 092306, (2015).
33. Barnali Pal, Swarup Poria, and **Biswajit Sahu** : "Instability saturation by the oscillating two-stream instability in a weakly relativistic plasma ", *Physics of Plasmas*, **22**, 42306, (2015).
34. **Biswajit Sahu**, Sourav Choudhury, and Anjana Sinha : "Small and arbitrary shock structures in spin 1/2 magnetohydrodynamic quantum plasma", *Physics of Plasmas*, **22**, 022304, (2015).
35. A.P. Misra and **Biswajit Sahu** : "Multidimensional ion-acoustic solitary waves and shocks in quantum plasmas", *Physica A*, **421**, 269, (2015).
36. Debjit Dutta, Prasenjit Singha, and **Biswajit Sahu** : "Interlaced linear-nonlinear wave propagation in a warm multicomponent plasma", *Physics of Plasmas*, **21**, 122308, (2014).
37. **Biswajit Sahu**, Anjana Sinha, and Rajkumar Roychoudhury : "Nonlinear features of ion acoustic shock waves in dissipative magnetized dusty plasma", *Physics of Plasmas*, **21**, 103701, (2014).
38. **Biswajit Sahu**, Anjana Sinha, Rajkumar Roychoudhury, and Manoranjan Khan : "Arbitrary amplitude magnetosonic solitary and shock structures in spin quantum plasma", *Physics of Plasmas*, **20**, 112303, (2013).
39. **Biswajit Sahu**, Barnali Pal, Swarup Poria, and Rajkumar Roychoudhury : " Dynamics of low dimensional model for weakly relativistic Zakharov equations for plasmas", *Physics of Plasmas* , **20**, 052303, (2013).
40. Deb Kumar Ghosh, Prasanta Chatterjee, Pankaj Kumar Mondal and **Biswajit Sahu** : "Nonplanar ion-acoustic shocks in electron–positron–ion plasmas: Effect of superthermal electrons", *Pramana- Journal of Physics*, **81**, 491 (2013).
41. **Biswajit Sahu** and Prasenjit Singha : "Arbitrary Amplitude Ion Acoustic Solitary Waves in An Unmagnetized Two Electron Population Ultra-Relativistic Dense Plasmas", *Earth Moon, and Planets*, **110**, 165 (2013).

42. **Biswajit Sahu** : "Propagation of two-solitons in an electron acoustic waves in a plasma with electrons featuring Tsallis distribution", *Astrophysics and Space Science*, **346**, 415 (2013).
43. **Biswajit Sahu** and Naba Kumar Ghosh : "Kadomtsev-Petviashvili solitons in quantum plasmas", *Astrophysics and Space Science*, **343**, 289 (2013).
44. Prasanta Chatterjee, Deb Kumar Ghosh, Uday Narayan Ghosh, and **Biswajit Sahu** : "Nonplanar dust-acoustic solitary waves and double layers in a four-component dusty plasma with superthermal electrons", *Journal of Plasma Physics*, **79**, 691 (2013).
45. **Biswajit Sahu** : "Propagation of two-solitons in an electron acoustic waves with superthermal electrons", *Euro Physics Letters (EPL)*, **101**, 55002 (2013).
46. **Biswajit Sahu** and Mouloud Tribeche : "Nonplanar electron acoustic shock waves", *Advances in Space Research*, **51**, 2353 (2013).
47. **Biswajit Sahu** and Rajkumar Roychoudhury : "Two-soliton solution of ion acoustic solitary waves in nonplanar geometry", *Astrophysics and Space Science*, **345**, 91, (2013).
48. Uday Narayan Ghosh, Deb Kumar Ghosh, Prasanta Chatterjee, and **Biswajit Sahu** : "Superthermal effect of electrons on nonplanar dust-ion-acoustic solitary waves and double layers in a dusty plasma", *Astrophysics and Space Science*, **342**, 449, (2012).
49. Deb Kumar Ghosh, Prasanta Chatterjee, and **Biswajit Sahu** : "Nonplanar ion acoustic solitary waves with superthermal electrons and positrons", *Astrophysics and Space Science*, **341**, 559, (2012).
50. **Biswajit Sahu** and Rajkumar Roychoudhury : "Nonplanar ion acoustic waves with nonthermal electrons", *Earth, Moon, and Planets*, **109**, 77 (2012).
51. **Biswajit Sahu** and Rajkumar Roychoudhury : "Zakharov-Kuznetsov equation for ion acoustic waves with superthermal electrons in cylindrical geometry", *Euro Physics Letters (EPL)*, **100**, 15001, (2012).
52. **Biswajit Sahu**, Swarup Poria, Uday Narayan Ghosh, and Rajkumar Roychoudhury : "Quasi-periodic behavior of ion acoustic solitary waves in electron-ion quantum plasma", *Physics of Plasmas*, **19**, 052306, (2012).
53. **Biswajit Sahu** and Rajkumar Roychoudhury : "Effect of finite ion temperature on arbitrary amplitude dust ion acoustic solitary waves in quantum plasma", *Indian Journal of Physics*, **86**, 401, (2012).

54. **Biswajit Sahu**, Swarup Poria, and Rajkumar Roychoudhury : "Solitonic, quasi-periodic and periodic pattern of electron acoustic waves in quantum plasma", *Astrophysics and Space Science*, **341**, 567, (2012).
55. **Biswajit Sahu** and Mouloud Tribeche : "Small amplitude double-layers in an electron depleted dusty plasma with ions featuring the Tsallis distribution", *Astrophysics and Space Science*, **341**, 573 (2012).
56. Prasanta Chatterjee, Deb Kumar Ghosh and **Biswajit Sahu** : "Planar and nonplanar ion acoustic shock waves with nonthermal electrons and positrons", *Astrophysics and Space Science*, **339**, 261 (2012).
57. **Biswajit Sahu** and Mouloud Tribeche : "Nonextensive dust acoustic solitary and shock waves in nonplanar geometry", *Astrophysics and Space Science*, **338**, 259 (2012).
58. **Biswajit Sahu** : "Ion acoustic solitary and shock waves with nonextensive electrons and thermal positrons in nonplanar geometry", *Astrophysics and Space Science*, **338**, 251 (2012).
59. **Biswajit Sahu** and Mouloud Tribeche : "Nonplanar electron acoustic shock waves in a plasma with electrons featuring Tsallis distribution", *Physics of Plasmas*, **19**, 022304 (2012).
60. **Biswajit Sahu** : "Ion acoustic solitary waves and double layers with nonextensive electrons and thermal positrons", *Physics of Plasmas*, **18**, 082302 (2011).
61. **Biswajit Sahu** : "Nonplanar ion acoustic waves with kappa-distributed electrons", *Physics of Plasmas*, **18**, 062308 (2011).
62. **Biswajit Sahu** : "Cylindrical or Spherical Dust-Ion Acoustic Shocks in an Adiabatic Dusty Plasma", *Bulgarian Journal of Physics*, **38**, 175 (2011).
63. **Biswajit Sahu** : "Quantum ion acoustic solitary waves in weak relativistic plasma", *Pramana- Journal of Physics*, **76**, 933 (2011).
64. P.Chatterjee, U.N.Ghosh, K.Roy, S.V.Muniandy, C.S.Wong, and **Biswajit Sahu** : Head-on collision of ion acoustic solitary waves in an electron-positron-ion plasma with superthermal electrons, *Physics of Plasmas*, **17**, 122314 (2010).
65. **Biswajit Sahu** : "Electron acoustic solitary waves and double layers with superthermal hot electrons", *Physics of Plasmas*, **17**, 122305 (2010).

66. **Biswajit Sahu** : “Positron acoustic shock waves in planar and nonplanar geometry”, *Physica Scripta*, **82**, 065504 (2010).
67. **Biswajit Sahu** and Rajkumar Roychoudhury : “Quantum ion acoustic shock waves in planar and nonplanar geometry”, *Physics of Plasmas*, **14**, 072310 (2007).
68. **Biswajit Sahu** and Rajkumar Roychoudhury : “Cylindrical and spherical quantum ion acoustic waves”, *Physics of Plasmas*, **14**, 012304 (2007).
69. **Biswajit Sahu** and Rajkumar Roychoudhury : “Electron acoustic solitons in a relativistic plasma with nonthermal electrons”, *Physics of Plasmas*, **13**, 072302 (2006).
70. **Biswajit Sahu** and Rajkumar Roychoudhury : Response to “Comment on ‘Exact solutions of cylindrical and spherical dust ion acoustic waves’”, *Physics of Plasmas*, **12**, 054701 (2005).
71. **Biswajit Sahu** and Rajkumar Roychoudhury : “Cylindrical and spherical ion acoustic waves in a plasma with nonthermal electrons and warm ions”, *Physics of Plasmas*, **12**, 052106 (2005).
72. **Biswajit Sahu** and Rajkumar Roychoudhury : “Cylindrical and spherical ion acoustic shock waves in multielectron temperature collisional plasma”, *Physics of Plasmas*, **11**, 4871 (2004).
73. **Biswajit Sahu** and Rajkumar Roychoudhury : “Electron acoustic solitary waves and double layers in a relativistic electron-beam plasma system”, *Physics of Plasmas*, **11**, 1947 (2004).
74. **Biswajit Sahu** and Rajkumar Roychoudhury : “Exact solutions of cylindrical and spherical dust ion acoustic waves”, *Physics of Plasmas*, **10**, 4162 (2003).
75. **Biswajit Sahu** and Rajkumar Roychoudhury : “Travelling wave solution of Korteweg-de Vries-Burger’s equation”, *Czechoslovak Journal of Physics*, **53**, 517 (2003).

◆ **Research Collaborations :**

University of Bab-Ezzouar, Algeria
Indian Statistical Institute, Kolkata
University of Calcutta, Kolkata
Visva-Bharati, Santiniketan
National Institute of Technology, Arunachal Pradesh.