

Amaresh Jaiswal



Associate Professor
National Institute of Science Education and Research
Jatni-752050, Khurda, Odisha, India
Email: a.jaiswal@niser.ac.in

Date of Birth: March 01, 1985
Nationality: Indian
Gender: Male
Phone: +91-674-2494104

Positions Held

- July 2023 - present: *Associate Professor*, School of Physical Sciences, National Institute of Science Education and Research (NISER), Jatni, India.
- February 2024 - June 2024: *Visiting Professor*, Jagiellonian University, Krakow, Poland.
- July 2019 - June 2023: *Reader-F*, School of Physical Sciences, National Institute of Science Education and Research (NISER), Jatni, India.
- August 2019 - June 2021: *Adjunct/Visiting Faculty*, Department of Physical Sciences, Indian Institute of Science Education and Research (IISER), Berhampur, India.
- April 2017 - June 2019: *Assistant Professor*, School of Physical Sciences, National Institute of Science Education and Research (NISER), Jatni, India.
- October 2014 - April 2017: *Post-doctoral Fellow*, Theory Division, GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany.
- March 2014 - September 2014: *Visiting Fellow*, Tata Institute of Fundamental Research (TIFR), Mumbai, India.

Education

- April 2010 - February 2014: *Doctor of Philosophy*, Tata Institute of Fundamental Research, Mumbai, India.
- July 2008 - March 2010: *Master of Science*, Tata Institute of Fundamental Research, Mumbai, India.
- July 2003 - August 2007: *Bachelor of Technology*, Visvesvaraya National Institute of Technology, Nagpur, India.

Short Term Research Visits

- July 01, 2023 - July 16, 2023: Marian Smoluchowski Institute of Physics of the Jagiellonian University, Krakow, Poland.
- September 24, 2022 - October 2, 2022: Indian Institute of Technology, Roorkee, India.
- June 1, 2019 - June 16, 2019: Indian Institute of Science Education and Research, Pune, India.
- May 11, 2019 - May 26, 2019: Marian Smoluchowski Institute of Physics of the Jagiellonian University, Krakow, Poland.
- February 18, 2019 - February 23, 2019: Department of Theoretical Physics, TIFR, Mumbai, India.

- May 20, 2018 - June 10, 2018: CERN Theory Division, Geneva, Switzerland.
- September 24, 2017 - September 30, 2017; December 3, 2017 - December 19, 2017: EMMI Visiting Researcher, GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany.
- July 12, 2017 - July 22, 2017: Indian Institute of Technology (IIT) Gandhinagar, India.
- March 12, 2017 - March 19, 2017: Istituto Nazionale di Fisica Nucleare (INFN) - Laboratori Nazionali del Sud, Catania, Italy.
- March 22, 2015 - April 1, 2015: The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences, Krakow, Poland.
- May 5, 2014 - May 10, 2014: Saha Institute of Nuclear Physics (SINP), Kolkata, India.
- July 2, 2012 - July 7, 2012; January 12, 2014 - January 16, 2014; February 3, 2016 - February 7, 2016; May 29, 2017 - May 31, 2017: Variable Energy Cyclotron Centre (VECC), Kolkata, India.

Fellowships and Awards

- Visiting Professorship, Jagiellonian University, Krakow, Poland, 2024.
- Life member of the Indian Physics Association from 2024.
- Young Achiever Award, DAE Symposium on Nuclear Physics (2022).
- Enlisted in Stanford University's list of top 2% most influential scientists (2020).
- INSPIRE Faculty Award from Department of Science & Technology, India (2017).
- Post-doctoral research fellowship from GSI Darmstadt, Germany (2016-2017).
- Post-doctoral research fellowship from Frankfurt Institute for Advanced Studies at the Goethe-University Frankfurt am Main, Germany (2014-2016).
- TIFR Alumni Association – Geeta Udgaonkar Award for Best Ph.D. Thesis (2014-2015).
- Honourable Mention in Rahul Basu Memorial Award for Best Ph.D. Thesis in High Energy Physics (2014).
- Ph.D. research scholarship from Tata Institute of Fundamental Research (TIFR), Mumbai, India (2008-2014).

Scientific Reviewer of

- Physics Letters B.
- Physical Review C, D, E.
- Journal of Physics G.
- European Physical Journal A.
- Scientific Reports - Nature.
- Advances in High Energy Physics.

Other Administrative Roles

- Warden of a student's hostel in NISER.
- Seminar and colloquium organization at SPS-NISER.
- Involved in DESY documentation, as part of the INSPIRE-HEP collaboration.

Research Interests

- Theoretical High Energy Physics:
 - Relativistic dissipative fluid dynamics.
 - Kinetic Theory and transport models.
 - Heavy quark and quarkonia in quark-gluon plasma (QGP).
- Gravitation, cosmology and general relativity.

Current Areas of Research

- Relativistic dissipative fluid dynamics with spin.
- Theoretical formulation of causal relativistic dissipative fluid dynamics from kinetic theory.
- Thermal and blast wave model study of relativistic heavy-ion collisions.
- Phenomenology of heavy quarkonia in relativistic heavy-ion collisions.
- Cosmology and nuclear astrophysics.

Teaching

- At NISER Bhubaneswar, Jatni:
 - P307: Nuclei & Particle Physics (Spring 2022).
 - P302: Statistical Mechanics (Monsoon 2021, 2022).
 - P477/PH677/P775: Relativistic Nucleus-Nucleus Collision & QGP (Spring 2021, 2023).
 - P601/P701: Classical Mechanics (Monsoon 2019, 2020).
 - P205: Mathematical Methods II (Spring 2018, 2019, 2020).
 - P202: Mathematical Methods I (Monsoon 2017, 2018).
- At Jagiellonian University:
 - Strongly interacting matter in big bang and little bangs (Spring 2024).
 - Relativistic kinetic theory and non-equilibrium transport (Spring 2024).
- At IISER Berhampur:
 - PHY-302: Mathematical Methods II (Spring 2020, 2021).
 - PHY-301: Mathematical Methods I (Monsoon 2019, 2020).

- Short lecture series:
 - ALICE-India Webinar lecture (online) on Relativistic Hydrodynamics and Collective Flow (April 2024).
 - Student day lecture on relativistic hydrodynamics in heavy-ion collisions in ICPAQGP Puri (February 2023).
 - Set of 2 lectures on relativistic kinetic theory, transport and hybrid models in ALICE-STAR India School at IOP Bhubaneswar (November 2022).
 - Mini course on relativistic hydrodynamics (15 lectures + 5 tutorials) at IIT Roorkee (September-October 2022).
 - Series of 10 lectures on relativistic hydrodynamics at NISER (June 2019).
 - Special lecture in the school “The Myriad Colorful Ways of Understanding Extreme QCD Matter”, (April 2019)
 - Series of 3 lectures on relativistic hydrodynamics in CNT Workshop "Effective Theory of Hadrons: Vacuum to Medium" (March 2018).
 - Tutor in “XI SERC School on Experimental High-Energy Physics" at NISER (November 2017).

Conference Organization

- Member of National Advisory Committee and session chair of “4th Heavy Flavour Meet 2023, IIT Goa, November 02-04, 2023.
- Member of Program Committee of “India-JINR Workshop on Elementary Particle and Nuclear Physics, and Condensed Matter Research, JINR Dubna, Russia, October 16-19, 2023.
- Organized “2nd Workshop on Dynamics of QCD Matter, NISER, October 07-09, 2023.
- Organized “Emergent Topics in Relativistic Hydrodynamics, Chirality, Vorticity and Magnetic Field, NISER (Toshali Sands, Puri), February 02-05, 2023.
- Organized “Workshop on Dynamics of QCD Matter”, NISER, 15-17 August 2019.
- Organizer of “DAE-BRNS High Energy Physics Symposium”, NISER, December 14-18, 2020.
- Session chair in “Heavy Hadrons in heavy ion and particle collisions 2023, IIT Gandhinagar, March 24-25, 2023.
- Session chair in “International Conference on Physics and Astrophysics of Quark Gluon Plasma Puri, February 7-10, 2023.
- Session chair in Conference on “Hot QCD Matter 2022, Goa, May 12-14, 2022.
- Session chair in the online workshop on “Spin and hydrodynamics in relativistic nuclear collisions, ECT*, Trento, Italy October 5-16, 2020.
- Session chair in “MITP Workshop on Relativistic Hydrodynamics: Theory and Modern Applications”, Mainz Institute of Theoretical Physics, Mainz, Germany, October 10-14, 2016.

Research Highlights

- Preprints: 5
- Articles: 51
- Conference proceedings: 20
- Total citations: 2200⁺
- Number of 100⁺ cited papers: 7
- Number of 50⁺ cited papers: 7
- Hirsch-Index: 23
- Source: <http://inspirehep.net/author/profile/Amaresh.Jaiswal.1>
- Number of conference talks and seminars/colloquia delivered: 50⁺

List of Publications

Preprints:

1. Soham Bannerjee, Samapan Bhadury, Wojciech Florkowski, [Amaresh Jaiswal](#) and Radoslaw Ryblewski, “*Longitudinal spin polarization in a thermal model with dissipative corrections*”, [arXiv:2405.05089].
2. Sourav Dey, [Amaresh Jaiswal](#) and Hiranmaya Mishra, “*Diffusion coefficient matrix for multiple conserved charges: a Kubo approach*”, [arXiv:2404.18718].
3. Mahammad Sabir Ali, Deeptak Biswas, [Amaresh Jaiswal](#) and Sushant K. Singh, “*Hadron momentum spectra from analytical solutions of relativistic hydrodynamics*”, [arXiv:2403.00624].
4. Sadaf Madni, Arghya Mukherjee, [Amaresh Jaiswal](#), and Najmul Haque “*Shear and bulk viscosity of quark-gluon plasma with Gribov gluons and quasiparticle quarks*”, [arXiv:2401.08384].
5. Lakshmi J. Naik, Sunil Jaiswal, K. Sreelakshmi, [Amaresh Jaiswal](#) and V. Sreekanth, “*Hydrodynamical attractor and thermal particle production in heavy-ion collision*”, [arXiv:2107.08791].

Journal Publications:

1. Mahammad Sabir Ali, Deeptak Biswas, [Amaresh Jaiswal](#) and Hiranmaya Mishra, “*Effects of strangeness on the chiral pseudo-critical line*”, To appear in **Phys. Rev. D**, [arXiv:2403.11965].
2. Pushpa Panday, [Amaresh Jaiswal](#) and Binoy Krishna patra, “*Causal third-order viscous hydrodynamics within relaxation-time approximation*”, **Phys. Rev. D** **109**, 096039 (2024), [arXiv:2404.06381].
3. A. Andronic et. al., “*Comparative study of quarkonium transport in hot QCD matter*”, **Eur. Phys. J. A** **60**, 4, 88 (2024), [arXiv:2402.04366].
4. Pracheta Singha, Samapan Bhadury, Arghya Mukherjee and [Amaresh Jaiswal](#), “*Relativistic BGK hydrodynamics*”, **Eur. Phys. J. C** **84**, 4, 417 (2024), [arXiv:2301.00544].
5. [Amaresh Jaiswal](#), “*Quasiparticle Cosmology*”, **Phys. Rev. D** **109**, L081301 (2024), [arXiv:2308.03389].
6. Dipika Dash, Sunil Jaiswal, Samapan Bhadury and [Amaresh Jaiswal](#), “*Relativistic second-order viscous hydrodynamics from kinetic theory with extended relaxation-time approximation*”, **Phys. Rev. C** **108**, 064913 (2023), [arXiv:2307.06195].
7. Sudhir Pandurang Rode, Partha Pratim Bhaduri and [Amaresh Jaiswal](#), “*Flow fluctuations and kinetic freeze-out of identified hadrons at energies available at the CERN Super Proton Synchrotron*”, **Phys. Rev. C** **108**, 014906 (2023), [arXiv:2303.10947].
8. Deekshit Kumar, Nachiketa Sarkar, Partha Pratim Bhaduri and [Amaresh Jaiswal](#), “*Examination of thermalization of quarkonia at energies available at the CERN Large Hadron Collider*”, **Phys. Rev. C** **107**, 064906 (2023), [arXiv:2303.02900].

9. Sourav Dey, Wojciech Florkowski, Amaresh Jaiswal and Radoslaw Ryblewski, “*Pseudogauge freedom and the $SO(3)$ algebra of spin operators*”, **Phys. Lett. B** **843**, 137994 (2023), [arXiv:2303.05271].
10. Nisarg Vyas, Sunil Jaiswal and Amaresh Jaiswal, “*Metric anisotropies and nonequilibrium attractor for expanding plasma*”, **Phys. Lett. B** **841**, 137943 (2023), [arXiv:2212.02451].
11. Santosh K. Das et. al., “*Dynamics of Hot QCD Matter – Current Status and Developments*”, **Int. J. Mod. Phys. E** **31**, 2250097 (2022), [arXiv:2008.13440].
12. Sunil Jaiswal, Jean-Paul Blaizot, Rajeev S. Bhalerao, Zenan Chen, Amaresh Jaiswal, and Li Yan, “*From moments of the distribution function to hydrodynamics: The nonconformal case*”, **Phys. Rev. C** **106**, 044912 (2022), [arXiv:2208.02750].
13. Samapan Bhadury, Wojciech Florkowski, Amaresh Jaiswal, Avdhesh Kumar, and Radoslaw Ryblewski, “*Relativistic Spin Magnetohydrodynamics*”, **Phys. Rev. Lett.** **129**, 192301 (2022), [arXiv:2204.01357].
14. Dipika Dash, Samapan Bhadury, Sunil Jaiswal and Amaresh Jaiswal, “*Extended relaxation time approximation and relativistic dissipative hydrodynamics*”, **Phys. Lett. B** **831**, 137202 (2022), [arXiv:2112.14581].
15. Samapan Bhadury, Jitesh Bhatt, Amaresh Jaiswal and Avdhesh Kumar, “*New developments in relativistic fluid dynamics with spin*”, **Eur. Phys. J. ST** **230**, 3, 655-672 (2021), [arXiv:2101.11964].
16. Samapan Bhadury, Manu Kurian, Vinod Chandra and Amaresh Jaiswal, “*Second order relativistic viscous hydrodynamics within an effective description of hot QCD medium*”, **J. Phys. G** **48**, 105104 (2021), [arXiv:2010.01537].
17. Sumana Bhattacharyya, Amaresh Jaiswal and Sutanu Roy, “*Chemical freeze-out systematics of thermal model analysis using hadron yield ratios*”, **Phys. Rev. C** **103**, 024905 (2021), [arXiv:2009.13399].
18. Samapan Bhadury, Wojciech Florkowski, Amaresh Jaiswal, Avdhesh Kumar and Radoslaw Ryblewski, “*Dissipative Spin Dynamics in Relativistic Matter*”, **Phys. Rev. D** **103**, 014030 (2021), [arXiv:2008.10979].
19. Amaresh Jaiswal et. al., “*Dynamics of QCD matter — current status*”, **Int. J. Mod. Phys. E** **30**, 2130001 (2021), [arXiv:2007.14959].
20. Partha Pratim Bhaduri, Mubarak Alqahtani, Nicolas Borghini, Amaresh Jaiswal and Michael Strickland, “*Fireball tomography from bottomonia elliptic flow in relativistic heavy-ion collisions*”, **Eur. Phys. J. C** **81**, 7, 585 (2021), [arXiv:2007.03939].
21. Samapan Bhadury, Wojciech Florkowski, Amaresh Jaiswal, and Radoslaw Ryblewski, “*Relaxation time approximation with pair production and annihilation processes*”, **Phys. Rev. C** **102**, 064910 (2020), [arXiv:2006.04252].
22. Amaresh Jaiswal and Najmul Haque, “*Covariant kinetic theory and transport coefficients for Gribov plasma*”, **Phys. Lett. B** **811**, 135936 (2020), [arXiv:2005.01303].

23. Sudhir Pandurang Rode, Partha Pratim Bhaduri, [Amaresh Jaiswal](#) and Ankhi Roy, “*Hierarchy of kinetic freeze-out parameters in low energy heavy-ion collisions*”, **Phys. Rev. C** **102**, 054912 (2020), [arXiv:2004.04703].
24. Samapan Bhadury, Wojciech Florkowski, [Amaresh Jaiswal](#), Avdhesh Kumar and Radoslaw Ryblewski, “*Relativistic dissipative spin dynamics in the relaxation time approximation*”, **Phys. Lett. B** **814**, 136096 (2021), [arXiv:2002.03937].
25. [Amaresh Jaiswal](#), “*Angular Momentum and Magnetic Field in Relativistic Heavy-ion Collisions*”, **AAPPS Bull.** **30**, 5, 19-21 (2020).
26. Deeptak Biswas, Kishan Deka, [Amaresh Jaiswal](#) and Sutanu Roy, “*Viscosity and non-conformal equation of state in Landau hydrodynamics*”, **Phys. Rev. C** **102**, 014912 (2020), [arXiv:1910.13368].
27. Samapan Bhadury, Manu Kurian, Vinod Chandra and [Amaresh Jaiswal](#), “*First order dissipative hydrodynamics and viscous corrections to the entropy four-current from an effective covariant kinetic theory*”, **J. Phys. G** **47**, 085108 (2020), [arXiv:1902.05285].
28. Sunil Jaiswal, Chandrodoy Chattopadhyay, [Amaresh Jaiswal](#), Subrata Pal and Ulrich Heinz, “*Exact solutions and attractors of higher-order viscous fluid dynamics for Bjorken flow*”, **Phys. Rev. C** **100**, 034901 (2019), [arXiv:1907.07965].
29. Partha Pratim Bhaduri, Nicolas Borghini, [Amaresh Jaiswal](#) and Michael Strickland, “*Anisotropic escape mechanism and elliptic flow of bottomonia*”, **Phys. Rev. C** **100**, 051901 (2019), [arXiv:1809.06235].
30. Chandrodoy Chattopadhyay, [Amaresh Jaiswal](#), Sunil Jaiswal and Subrata Pal, “*Analytical solutions of causal relativistic hydrodynamic equations for Bjorken and Gubser flows*”, **Nucl. Phys. A** **982**, 911 (2019), [arXiv:1807.05544].
31. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#), Radoslaw Ryblewski and Enrico Speranza, “*Relativistic hydrodynamics with spin*”, **Nucl. Phys. A** **982**, 523 (2019), [arXiv:1807.04946].
32. Sudhir Pandurang Rode, Partha Pratim Bhaduri, [Amaresh Jaiswal](#) and Ankhi Roy, “*Kinetic freeze out conditions in nuclear collisions with 2–158A GeV beam energy within a non boost- invariant blast wave model*”, **Phys. Rev. C** **98**, 024907 (2018), [arXiv:1805.11463].
33. Enrico Speranza, [Amaresh Jaiswal](#) and Bengt Friman, “*Virtual photon polarization and dilepton anisotropy in relativistic nucleus-nucleus collisions*”, **Phys. Lett. B** **782**, 395 (2018), [arXiv:1802.02479].
34. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#), Radoslaw Ryblewski and Enrico Speranza, “*Spin-dependent distribution functions for relativistic hydrodynamics of spin-1/2 particles*”, **Phys. Rev. D** **97**, 116017 (2018), [arXiv:1712.07676].
35. [Amaresh Jaiswal](#) and Partha Pratim Bhaduri, “*Effect of anisotropic escape mechanism on elliptic flow in relativistic heavy-ion collisions*”, **Phys. Rev. C** **97**, 044909 (2018), [arXiv:1712.02707].
36. Ashutosh Dash and [Amaresh Jaiswal](#), “*Metric anisotropies and emergent anisotropic hydrodynamics*”, **Phys. Rev. D** **97**, 104005 (2018), [arXiv:1711.07130].
37. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#) and Enrico Speranza, “*Relativistic fluid dynamics with spin*”, **Phys. Rev. C** **97**, 041901(R) (2018), [arXiv:1705.00587].

38. Leonardo Tinti, [Amaresh Jaiswal](#) and Radoslaw Ryblewski, “*Quasiparticle second-order viscous hydrodynamics from kinetic theory*”, **Phys. Rev. D** **95**, 054007 (2017), [arXiv:1612.07329].
39. [Amaresh Jaiswal](#) and Victor Roy, “*Relativistic hydrodynamics in heavy-ion collisions: general aspects and recent developments*”, **Adv. High Energy Phys.** **2016**, 9623034 (2016), [arXiv:1605.08694].
40. [Amaresh Jaiswal](#), Bengt Friman and Krzysztof Redlich, “*Relativistic second-order dissipative hydrodynamics at finite chemical potential*”, **Phys. Lett. B** **751**, 548 (2015), [arXiv:1507.02849].
41. Rajeev S. Bhalerao, [Amaresh Jaiswal](#), and Subrata Pal, “*Collective flow in event-by-event partonic transport plus hydrodynamics hybrid approach*”, **Phys. Rev. C** **92**, 014903 (2015), [arXiv:1503.03862].
42. Wojciech Florkowski, [Amaresh Jaiswal](#), Ewa Maksymiuk, Radoslaw Ryblewski, and Michael Strickland, “*Relativistic quantum transport coefficients for second-order viscous hydrodynamics*”, **Phys. Rev. C** **91**, 054907 (2015), [arXiv:1503.03226].
43. Chandrodoy Chattopadhyay, [Amaresh Jaiswal](#), Subrata Pal, and Radoslaw Ryblewski, “*Relativistic third-order viscous corrections to the entropy four-current from kinetic theory*”, **Phys. Rev. C** **91**, 024917 (2015), [arXiv:1411.2363].
44. [Amaresh Jaiswal](#), Radoslaw Ryblewski, and Michael Strickland, “*Transport coefficients for bulk viscous evolution in the relaxation time approximation*”, **Phys. Rev. C** **90**, 044908 (2014), [arXiv:1407.0837].
45. [Amaresh Jaiswal](#), “*Relaxation-time approximation and relativistic viscous hydrodynamics from kinetic theory*”, **Nucl. Phys. A** **931**, 1205 (2014), [arXiv:1407.0837].
46. Rajeev S. Bhalerao, [Amaresh Jaiswal](#), Subrata Pal, and V. Sreekanth, “*Relativistic viscous hydrodynamics for heavy-ion collisions: A comparison between Chapman-Enskog and Grad’s methods*”, **Phys. Rev. C** **89**, 054903 (2014), [arXiv:1312.1864].
47. Rajeev S. Bhalerao, [Amaresh Jaiswal](#), Subrata Pal, and V. Sreekanth, “*Particle production in relativistic heavy-ion collisions: A consistent hydrodynamic approach*”, **Phys. Rev. C** **88**, 044911 (2013), [arXiv:1305.4146].
48. [Amaresh Jaiswal](#), “*Relativistic third-order dissipative fluid dynamics from kinetic theory*”, **Phys. Rev. C** **88**, 021903(R) (2013), [arXiv:1305.3480].
49. [Amaresh Jaiswal](#), “*Relativistic dissipative hydrodynamics from kinetic theory with relaxation-time approximation*”, **Phys. Rev. C** **87**, 051901(R) (2013), [arXiv:1302.6311].
50. [Amaresh Jaiswal](#), Rajeev S. Bhalerao, and Subrata Pal, “*Complete relativistic second-order dissipative hydrodynamics from the entropy principle*”, **Phys. Rev. C** **87**, 021901(R) (2013), [arXiv:1302.0666].
51. [Amaresh Jaiswal](#), Rajeev S. Bhalerao, and Subrata Pal, “*New relativistic dissipative fluid dynamics from kinetic theory*”, **Phys. Lett. B** **720**, 347 (2013), [arXiv:1204.3779].

Conference Proceedings:

1. Samapan Bhadury, Wojciech Florkowski, [Amaresh Jaiswal](#), Avdhesh Kumar, and Radoslaw Ryblewski, “*Relativistic magnetohydrodynamics with spin*”, To appear in proceedings of **SPIN2023**, [arXiv:2401.16033].
2. Sunil Jaiswal, Jean-Paul Blaizot, Rajeev S. Bhalerao, Zenan Chen, [Amaresh Jaiswal](#), and Li Yan, “*Why are hydrodynamic theories applicable beyond the hydrodynamic regime?*”, To appear in proceedings of **Quark Matter 2023**, [arXiv:2312.10254].
3. Dipika Dash, Sunil Jaiswal, Samapan Bhadury and [Amaresh Jaiswal](#), “*Relativistic dissipative hydrodynamics within extended relaxation time approximation*”, **PoS LHCP2022**, 236 (2023).
4. Deekshit Kumar, Nachiketa Sarkar, Partha Pratim Bhaduri and [Amaresh Jaiswal](#), “*Charmonia thermalization in heavy-ion collisions at LHC*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **67** (2023) pp. 1045-1046.
5. Deekshit Kumar, Nachiketa Sarkar, Partha Pratim Bhaduri and [Amaresh Jaiswal](#), “*Kinetic freeze-out and Flow fluctuations in Au-Au collisions at $\sqrt{s_{NN}} = 9.2$ GeV*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **67** (2023) pp. 1131-1132.
6. Deekshit Kumar, Nachiketa Sarkar, Partha Pratim Bhaduri and [Amaresh Jaiswal](#), “*Bottomonia thermalization in heavy-ion collisions at the Large Hadron Collider*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **66** (2022) pp. 968-969.
7. Sunil Jaiswal, Jean-Paul Blaizot, Rajeev S. Bhalerao, Zenan Chen, [Amaresh Jaiswal](#), and Li Yan, “*On far-from-equilibrium applicability of hydrodynamics in heavy-ion collisions*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **66** (2022) pp. 934-935.
8. Dipika Dash, Samapan Bhadury, Sunil Jaiswal and [Amaresh Jaiswal](#), “*Relativistic hydrodynamics from Boltzmann equation in extended relaxation time approximation*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **66** (2022) pp. 922-923.
9. Lakshmi J. Naik, Sunil Jaiswal, K. Sreelakshmi, [Amaresh Jaiswal](#) and V. Sreekanth, “*Analytical attractors and thermal particle spectra from quark-gluon plasma*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **65** (2021) pp. 660-661.
10. Samapan Bhadury, Manu Kurian, Vinod Chandra and [Amaresh Jaiswal](#), “*Relativistic Dissipative Hydrodynamics: Effective Fugacity Quasiparticle Description*”, **Springer Proc. Phys.** **250**, (2020) 441-445.
11. Sunil Jaiswal, Chandrodoy Chattopadhyay, [Amaresh Jaiswal](#), Subrata Pal and Ulrich Heinz, “*Attractors in higher-order viscous hydrodynamics for Bjorken flow*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **64** (2019) pp. 37-38.
12. Sumana Bhattacharyya and [Amaresh Jaiswal](#), “*Viscous coalescence model for relativistic heavy-ion collisions*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **64** (2019) pp. 796-797.
13. Samapan Bhadury, Manu Kurian, Vinod Chandra and [Amaresh Jaiswal](#), “*First order dissipative hydrodynamics from an effective fugacity model*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **64** (2019) pp. 810-811.
14. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#), Radoslaw Ryblewski and Enrico Speranza, “*Relativistic fluid dynamics of spin-polarized systems of particles*”, **PoS Confinement 2018**, 158 (2018), [arXiv:1901.00352].

15. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#), Radoslaw Ryblewski and Enrico Speranza, “*Dynamics of relativistic spin-polarized fluids*”, **Acta Phys. Polon. Supp.** **12**, 399 (2019), [arXiv:1812.06801].
16. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#), Radoslaw Ryblewski and Enrico Speranza, “*Fluid dynamics for relativistic spin-polarized media*”, **Acta Phys. Polon. Supp.** **11**, 507 (2018), [arXiv:1810.01709].
17. Wojciech Florkowski, Bengt Friman, [Amaresh Jaiswal](#) and Enrico Speranza, “*Relativistic hydrodynamics of particles with spin 1/2*”, **Acta Phys. Polon. Supp.** **10**, 1139 (2017), [arXiv:1708.04035].
18. [Amaresh Jaiswal](#) and Volker Koch, “*A viscous blast-wave model for heavy-ion collisions*”, **J. Phys. Conf. Ser.** **779**, 012065 (2017).
19. [Amaresh Jaiswal](#) and Volker Koch, “*A viscous blast-wave model for high energy heavy-ion collisions*”, **EPJ Web Conf.** **120**, 06001 (2016).
20. [Amaresh Jaiswal](#), Bengt Friman and Krzysztof Redlich, “*Relativistic second-order dissipative fluid dynamics at finite chemical potential*”, **EPJ Web Conf.** **120**, 03008 (2016).
21. [Amaresh Jaiswal](#), “*Relativistic third-order viscous hydrodynamics*”, **Proceedings of the Indian National Science Academy** **81 No. 1** (2015) pp. 62-69.
22. [Amaresh Jaiswal](#), Rajeev S. Bhalerao, and Subrata Pal, “*Boltzmann H-theorem and relativistic second-order dissipative hydrodynamics*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **58** (2013) pp. 684-685.
23. [Amaresh Jaiswal](#), Rajeev S. Bhalerao, and Subrata Pal, “*New derivation of relativistic dissipative fluid dynamics*”, **Proceedings of the DAE Symp. on Nucl. Phys.** **57** (2012) pp. 760-761.
24. [Amaresh Jaiswal](#), Rajeev S. Bhalerao, and Subrata Pal, “*Relativistic hydrodynamics from Boltzmann equation with modified collision term*”, **Proceedings of the QGP Meet 2012**, Narosa Publication, New Delhi, India, [arXiv:1303.1892].
25. [Amaresh Jaiswal](#), Rajeev S. Bhalerao and Subrata Pal, “*Boltzmann equation with a non-local collision term and the resultant dissipative fluid dynamics*”, **J. Phys. Conf. Ser.** **422**, 012003 (2013), [arXiv:1210.8427].

Conference Presentations, Seminars and Colloquia

- “*Longitudinal spin polarization in a thermal model with dissipative corrections*”, Białasówka Seminar, AGH University, Krakow, May 24, 2024.
- “*Spin Polarization and Relativistic Spin-Hydrodynamics*”, Meeting on the physics of ALICE, CBM and STAR (MPACS) 2024, VECC Kolkata, January 29-30, 2024.
- “*Flow fluctuations and kinetic freeze-out at SPS energies*”, Workshop on Physics Performance Studies at NICA (NICA 2023), Virtual via ZOOM, December 25-27, 2023.
- “*Pseudogauge freedom and spin operator algebra in relativistic spin-hydrodynamics*”, Discussion meeting on Aspects of the QCD phase diagram, IISER Bhopal, November 18-20, 2023.

- “*Relativistic spin-(magneto)hydrodynamics*”, India-JINR workshop 2023, Dubna, Russia, October 16-19, 2023.
- “*Quasiparticle Cosmology*”, 2nd Workshop on Dynamics of QCD Matter, NISER, October 07-09, 2023.
- “*Quasiparticle Cosmology*”, VECC Physics Group Seminar, VECC Kolkata, September 04, 2023.
- “*Relativistic spin-(magneto)hydrodynamics*”, ISMD 2023, Gyöngyös, Hungary, August 21-26, 2023.
- “*Relativistic spin-(magneto)hydrodynamics*”, MAGIC 2023, Kovalam Kerala, March 28-April 1, 2023.
- “*Relativistic spin-(magneto)hydrodynamics*”, HHHPS 2023, IIT Gandhinagar, March 24-25, 2023.
- “*Relativistic spin-magnetohydrodynamics*”, ICPAQGP Puri, February 7-10, 2023.
- “*Relativistic spin-(magneto)hydrodynamics*”, HEP Seminar Series, NISER, January 20, 2023.
- “*Relativistic spin-(magneto)hydrodynamics*”, Free Meson Seminar, TIFR Mumbai, January 12, 2023.
- “*Relativistic spin-(magneto)hydrodynamics*”, 66th DAE Symposium on Nuclear Physics, Guwahati, December 1-5, 2022.
- “*Virtual photon polarization and dilepton anisotropy in relativistic heavy-ion collisions*”, CETHENP 2022, VECC Kolkata, November 15-17, 2022.
- “*Relativistic spin-magnetohydrodynamics*”, Excited QCD 2022, Sicily, Italy, October 24-28, 2022.
- “*Relativistic spin-(magneto)hydrodynamics*”, Nuclear Theory Group Seminar Series (online), McGill University, Canada, October 4, 2022.
- “*Relativistic spin-(magneto)hydrodynamics*”, IPA Lecture, IIT Roorkee, September 29, 2022.
- “*Relativistic spin-(magneto)hydrodynamics*”, Physics Seminar (online), Shandong University, China, September 21, 2022.
- “*Bottomonium elliptic flow from anisotropic escape*”, ALICE-India collaboration meeting, VECC Kolkata, September 5-8, 2022.
- “*Relativistic spin-magnetohydrodynamics*”, Out of Equilibrium Physics, IIT Mandi, July 3-8, 2022.
- “*Relativistic spin-magnetohydrodynamics*”, Conference on Hot QCD Matter 2022, Goa, May 12-14, 2022.
- “*Relativistic spin magneto-hydrodynamics*”, SPS Day, March 26, 2022, NISER Jatni, India.
- “*Spinning QGP*”, SPS Day, January 23, 2021, NISER Jatni, India.
- “*Angular Momentum and Magnetic Field in Relativistic Heavy-ion Collisions*”, AAPPS Bulletin Lecture Series 2020 (online), November 17, 2020, APCTP, Korea.

- “*Relativistic spin hydrodynamics*”, October 06, 2020, Extreme Nonequilibrium QCD (online), ICTS Bengaluru, India.
- “*Recent developments in relativistic hydrodynamics for heavy-ion collisions*”, IAU/KU Virtual High-Energy Physics Colloquium (online), September 29, 2020, Riyadh, Saudi Arabia.
- “*Attractors in relativistic fluid dynamics*”, 64th DAE-BRNS Symposium on Nuclear Physics, 26 December 2019, Lucknow University, India.
- “*Bottomonium elliptic flow from anisotropic escape*”, EMMI-RRTF meeting on Suppression and (re)generation of quarkonium in heavy-ion collisions at the LHC, 19 December 2019, GSI Darmstadt, Germany.
- “*Analytical solutions and attractors of higher-order viscous hydrodynamics*”, BIRS workshop on Theoretical Foundations of Relativistic Hydrodynamics, November 28, 2019, Banff, Alberta, Canada.
- “*Analytical solutions and attractors of higher-order viscous hydrodynamics for Bjorken flow*”, Theoretical Physics Seminar, Jagiellonian University, May 14, 2019, Krakow, Poland.
- “*Anisotropic escape mechanism and elliptic flow of bottomonia*”, 3rd Heavy Flavour Meet, March 19, 2019, IIT Indore, India.
- “*Anisotropic escape mechanism and elliptic flow of bottomonia*”, Free Meson Seminar, February 21, 2019, TIFR, Mumbai, India.
- “*Analytical solutions and attractors of higher-order viscous hydrodynamics for Bjorken flow*”, International Workshop XLVII on Gross Properties of Nuclei and Nuclear Excitations, January 18, 2019, Hirschegg, Kleinwalsertal, Austria.
- “*Formulation of relativistic dissipative hydrodynamics from microscopic theories*”, A symposium on heavy-ion physics at FAIR, RHIC & LHC facilities, June 19, 2018, NISER Jatni, India.
- “*Formulation of relativistic dissipative hydrodynamics from kinetic theory*”, IOP Seminar, May 1, 2018, IOP Bhubaneswar, India.
- Delivered a set of three lectures on “*Relativistic Hydrodynamics*” in CNT Workshop on effective field theory of hadrons: from vacuum to medium, 12-17 March 2018, VECC Kolkata, India.
- “*Quasiparticle viscous hydrodynamics from kinetic theory*”, The second Workshop of the Indo-French Network in High Energy Physics, February 28, 2018, IISER Pune, India.
- “*Virtual photon polarization and dilepton anisotropy in relativistic heavy ion collisions*”, Theory group seminar, December 13, 2017, GSI Darmstadt, Germany.
- “*Metric anisotropies and emergent anisotropic hydrodynamics*”, DNAP Seminar, November 23, 2017, TIFR, Mumbai, India.
- “*Hydrodynamics of vortical and polarized fluids*”, Initial Stages, September 21, 2017, Polish Academy of Arts and Sciences, Kraków, Poland.
- “*Effect of anisotropic escape mechanism on elliptic flow in relativistic heavy-ion collisions*”, DNAP Seminar, July 19, 2017, Tata Institute of Fundamental Research, Mumbai, India.
- “*Relativistic dissipative hydrodynamics from kinetic theory*”, Theory Colloquium, July 13, 2017, Indian Institute of Technology, Gandhinagar, India.

- “*Formulation of relativistic dissipative hydrodynamics from kinetic theory*”, Theory Group Seminar, May 30, 2017, Variable Energy Cyclotron Center, Kolkata, India.
- “*Relativistic dissipative hydrodynamics from kinetic theory: formulations and applications*”, Theory Group Seminar, March 16, 2017, INFN - Laboratori Nazionali Del Sud, Catania, Italy.
- “*Theory summary of Quark Matter 2017*”, EMMI NQM Seminar, February 16, 2017, GSI Darmstadt, Germany.
- “*Relativistic dissipative hydrodynamics from kinetic theory in the relaxation-time approximation*”, MITP Workshop on Relativistic Hydrodynamics: Theory and Modern Applications, October 11, 2016, Mainz Institute of Theoretical Physics, Mainz, Germany.
- “*Relativistic dissipative hydrodynamics from kinetic theory: formulations and applications*”, Theory Seminar, July 26, 2016, University of Heidelberg, Germany.
- “*A viscous blast-wave model for heavy-ion collisions*”, Strangeness in Quark Matter 2016, June 27–July 1, 2016, University of California at Berkeley, USA.
- “*A viscous blast-wave model for relativistic heavy-ion collisions*”, Physics Group Seminar, February 4, 2016, Variable Energy Cyclotron Center, Kolkata, India.
- “*Baryon diffusion and heat conductivity in QGP*”, EMMI Workshop: Fluctuations in Strongly Interacting Hot and Dense Matter: Theory and Experiment, November 2–6, 2015, GSI Darmstadt, Germany.
- “*A viscous blast-wave model for high energy heavy-ion collisions*”, XLV International Symposium on Multiparticle Dynamics, October 4–9, 2015, Wildbad Kreuth, Germany.
- “*Relativistic dissipative hydrodynamics from kinetic theory*”, EMMI NQM Seminar, September 9, 2015, GSI, Darmstadt, Germany.
- “*Relativistic viscous hydrodynamics from kinetic theory: formulation and application*”, Theory Seminar, March 30, 2015, The H. Niewodniczański Institute of Nuclear Physics, Polish Academy of Sciences, Kraków, Poland.
- “*Aspects of a causal theory of relativistic viscous hydrodynamics*”, Physics Seminar, March 27, 2015, AGH University of Science and Technology, Kraków, Poland.
- “*Formulation of relativistic dissipative fluid dynamics from kinetic theory*”, GSI Theory Seminar, November 4, 2014, GSI, Darmstadt, Germany.
- “*Relaxation-time approximation and relativistic viscous hydrodynamics from kinetic theory*”, Flash Talk, Quark Matter 2014 - XXIV International Conference on Ultra-relativistic Nucleus-Nucleus Collisions, May 19–24, 2014, Darmstadt, Germany.
- “*New developments in the formulation of relativistic dissipative fluid dynamics*”, Theory Division Seminar, May 6, 2014, Saha Institute of Nuclear Physics, Kolkata, India.
- “*Relativistic third-order viscous hydrodynamics from kinetic theory*”, International Conference on Matter at Extreme Conditions : Then & Now, January 15-17, 2014, Bose Institute, Kolkata, India.
- “*Boltzmann H-theorem and relativistic dissipative hydrodynamics*”, DAE Symposium on Nuclear Physics 2013, December 2–6, 2013, Bhabha Atomic Research Centre, Mumbai, India.
- “*Quark-Gluon Plasma: A Bubble-Free Liquid*”, The 31st Young Physicists’ Colloquium, August 23, 2013, Saha Institute of Nuclear Physics, Kolkata, India.

- “*Relativistic Dissipative Fluid Dynamics and Kinetic Theory*”, Physics Group Seminar, December 12, 2012, Variable Energy Cyclotron Center, Kolkata, India.
- “*New derivation of relativistic dissipative fluid dynamics*”, DAE Symposium on Nuclear Physics 2012, December 3–7, 2012, University of Delhi, Delhi, India.
- “*Relativistic Kinetic Theory and Dissipative Hydrodynamics*”, Nuclear Physics Group Seminar, October 15, 2012, Tata Institute of Fundamental Research, Mumbai, India.
- “*Relativistic hydrodynamics from Boltzmann equation with modified collision term*”, QGP Meet 2012, July 3–6, 2012, Variable Energy Cyclotron Center, Kolkata, India.
- “*Relativistic Third-Order Dissipative Hydrodynamics from Kinetic Theory*”, Free Meson Seminar, November 25, 2011, Tata Institute of Fundamental Research, Mumbai, India.