

Anar Rustamov

➤ All publications

I am a coauthor of more than 500 publications. A complete list of my works is available at: <https://web-docs.gsi.de/~rustamov/publications.html>

Below, I provide a list of the publications where I am one of the principal authors.

➤ Publications on phenomenology/theory

1. [A. Rustamov](#), "Fuzzy logic for reconstructing arbitrary moments of multiplicity distributions" Phys. Rev. C 110 (2024) 6, 064910.
2. P. Braun-Munzinger, K. Redlich, [A. Rustamov](#), J. Stachel, "The imprint of conservation laws on correlated particle production", JHEP 08 (2024) 113.
3. R. Holzmann, V. Koch, [A. Rustamov](#), J. Stroth, "Controlling volume fluctuations for studies of critical phenomena in nuclear collisions", Nucl. Phys. A 1050 (2024) 122924.
4. [A. Rustamov](#), J. Stroth and R. Holzmann, "A model-free procedure to correct for volume fluctuations in E-by-E analyses of particle multiplicities", Nucl. Phys. A 1034 (2023) 122641.
5. P. Braun-Munzinger, B. Friman, K. Redlich, [A. Rustamov](#), J. Stachel, "Establishing a non-critical baseline for fluctuation measurements", Nucl. Phys. A 1008 (2021) 122141
6. P. Braun-Munzinger, [A. Rustamov](#), J. Stachel, "QCD under extreme conditions", contribution to the book devoted to 50 years of QCD, e-Print: 2211.08819, Eur. Phys. J. C 83 (2023) 1125.
7. P. Braun-Munzinger, [A. Rustamov](#), J. Stachel, "The role of the local conservation laws in fluctuations of conserved charges", e-Print: 1907.03032 [nucl-th].
8. M. Gazdzicki, M. I. Gorenstein, M. Mackowiak-Pawłowska, [A. Rustamov](#), "Particle-Set Identification method to study multiplicity fluctuations", Nucl. Phys. A 1001 (2020) 121915.
9. M. Arslanodk, [A. Rustamov](#), "TIdentity module for the reconstruction of the moments of multiplicity distributions", Nucl. Instrum. Meth. A 946 (2019) 162622.
10. P. Braun-Munzinger, [A. Rustamov](#), and J. Stachel, "Bridging the gap between event-by-event fluctuation measurements and theory predictions in relativistic nuclear collisions", Nucl. Phys. A 960 (2017) 114-130.
11. [A. Rustamov](#), J. N. Rustamov, "On the Spiral Structures in Heavy-Ion Collisions", e-Print: 1602.01812 [hep-ph].
12. M. I. Gorenstein, W. Greiner, [A. Rustamov](#), "Strangeness Production in Light and Intermediate size Nucleus-Nucleus Collisions", Phys. Lett. B 731 (2014) 302-306.
13. [A. Rustamov](#), M. I. Gorenstein, "Identity Method for Moments of Multiplicity Distribution", Phys. Rev. C 86 (2012) 044906.

➤ Publications in proceedings of conferences

14. [A. Rustamov](#), Invited Plenary, "Deciphering the phases of QCD matter with fluctuations and correlations of conserved charges", EPJ Web Conf. 276 (2023) 01007, Contribution to: [SQM2022](#).
15. [A. Rustamov](#), Invited Plenary, "Overview of fluctuation and correlation measurements", Nucl.Phys.A 1005 (2021) 121858, Contribution to: [Quark Matter 2019](#).

Publications

16. P. Braun-Munzinger, A. Rustamov, J. Stachel, "Experimental results on fluctuations of conserved charges confronted with predictions from canonical thermodynamics", Nucl. Phys. A 982 (2019) 307-310, Contribution to: [Quark Matter 2018](#).
17. A. Rustamov, Invited Plenary, "Energy dependence of strangeness production and event-by-event fluctuations", EPJ Web Conf. 171 (2018) 02003, Contribution to: [SQM 2017](#).
18. A. Rustamov, "Net-baryon fluctuations measured with ALICE at the CERN LHC", Nucl. Phys. A 967 (2017) 453-456, Contribution to: [Quark Matter 2017](#).
19. A. Rustamov, Invited Plenary, "Multiplicity fluctuations of identified hadrons in central Pb+Pb collisions at the CERN SPS", PoS CPOD2013 (2013) 005, Contribution to: [CPOD 2013](#).
20. A. Rustamov, "Results from the NA61/SHINE and NA49 experiments", Nucl.Phys.A 904-905 (2013) 915c-918c, Contribution to: [Quark Matter 2012](#).
21. A. Rustamov, Invited Plenary, "The Horn, Kink and Step, Dale: from few GeV to few TeV", Central Eur. J. Phys. 10 (2012) 1267-1270, Contribution to CPOD 2011.
22. A. Rustamov, Invited Plenary, "Dilepton and strangeness production probed with HADES", Phys. Atom. Nucl. 75 (2012) 576-579, Contribution to: [CPOD 2010](#).
23. A. Rustamov, Invited Plenary, "Dilepton production studied with the HADES spectrometer", Int. J. Mod. Phys. A 26 (2011) 384-389, Contribution to: [MESON 2010](#).
24. A. Rustamov, "Inclusive meson production in 3.5-GeV p p collisions studied with the HADES spectrometer", AIP Conf.Proc. 1257 (2010) 1, 736-740, Contribution to: [Hadron 2009](#).

➤ Publications for experiments (ALICE, NA49, NA61/SHINE and HADES)

ALICE Collaboration

25. Measurement of correlations among net-proton, net-kaon and net-charge in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. Under publication.
(Member of the Internal Review Committee, IRC).
26. Probing strangeness hadronisation with event-by-event production of multistrange hadrons, Phys.Rev.Lett. 134 (2025) 2, 022303.
(Chair of the Internal Review Committee, IRC)
27. Towards the measurement of the genuine three-body interaction for ppp and pp Λ , Eur. Phys. J. A 59 (2023) 145.
(Member of the Internal Review Committee, IRC)
28. First measurement of antideuteron production fluctuations at energies available at the Large Hadron Collider, Phys. Rev. Lett. 131 (2023) 041901.
(Member of the Internal Review Committee, IRC)
29. Closing in on critical net baryon fluctuations at LHC energy: 3rd moment measurement in Pb-Pb collisions with ALICE, Phys. Lett. B 844 (2023) 137545.
(Member of the Paper Committee, PC)
30. Global baryon number conservation encoded in net-proton fluctuations measured with ALICE at the CERN LHC, PLB 807 (2020) 135564.
(Chair of the Paper Committee, PC)
31. Relative particle yield fluctuations in Pb-Pb collisions at 2.76 TeV, Eur. Phys. J. C (2019) 79: 236.
(Member of the Paper Committee, PC)

Publications

32. Future physics opportunities for high-density QCD at the LHC with heavy-ion and proton beams, CERN Yellow Rep.Monogr. 7 (2019) 1159-1410, e-Print: 1812.06772 [hep-ph].
(writing section 3.3 "Fluctuations of conserved charges" and performing the corresponding analysis and calculations.)

NA49 Collaboration

33. Phase-space dependence of particle-ratio fluctuations in Pb + Pb collisions from 20 A to 158 A GeV beam energy, Phys.Rev.C 89 (2014) 5, 054902.
(Chair of the Paper Committee, PC)

NA61/SHINE Collaboration

34. Measurements of multiplicity fluctuations of identified hadrons in inelastic proton-proton interactions at the CERN Super Proton Synchrotron, Eur.Phys.J.C 81 (2021) 5, 384.
(Internal Reviewer)
35. Search for the critical point of strongly-interacting matter in 40Ar+45Sc collisions at 150A GeV/c using scaled factorial moments of protons, Eur.Phys.J.C 83 (2023) 9, 881.
(Internal Reviewer)

HADES Collaboration

36. Inclusive e+e production in collisions of pions with protons and nuclei in the second resonance region of baryons, Phys.Rev.C 111 (2025) 2, 024908.
(Internal Reviewer)
37. Inclusive dielectron spectra in p+p collisions at 3.5 GeV, Eur.Phys.J.A 48 (2012) 64.
(Chair of the Paper Committee, PC)
38. Study of exclusive one-pion and one-eta production using hadron and dielectron channels in pp reactions at kinetic beam energies of 1.25 GeV and 2.2 GeV with HADES, Eur. Phys. J. A 48 (2012) 74.
(Member of the Paper Committee, PC)
39. The High-Acceptance Dielectron Spectrometer HADES, Eur.Phys.J.A 41 (2009) 243-277.
(Member of the Paper Committee, PC)

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