

Michael Strickland  
Professor  
Department of Physics  
Kent State University  
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USA

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# Curriculum Vitæ

- Educational Experience
- Duke University, Durham, NC, 1995 (MS Physics), 1997 (PhD Physics)
  - University of North Carolina, Chapel Hill, NC, 1992 (BS Physics)
  - North Carolina School of Science and Mathematics, Durham, NC, 1988

## Professional Experience

### *Positions*

- July 2022-  
July 2021-June 2022
  - Chair, Department of Physics, Kent State University
- August 2019-July 2021
  - Chair (Interim), Department of Physics, Kent State University
- April 2015-July 2019
  - Vice Director, Center for Nuclear Research, Kent State University
- Aug 2017-  
Aug 2015-  
Aug 2008-
  - Director, Center for Nuclear Research, Kent State University
  - Professor of Physics, Kent State University
  - Adjunct Professor of Physics, Ohio State University
  - Adjunct Fellow, Frankfurt Institute for Advanced Studies, Frankfurt am Main, Germany
- Jan 2013-2017
  - Associate Professor of Physics, Kent State University
- Aug 2008-Dec 2012
  - Assistant Professor of Physics, Gettysburg College
- Nov 2005-Aug 2008
  - Junior Fellow/Professor, Frankfurt Institute for Advanced Studies and Institute for Theoretical Physics, Frankfurt am Main, Germany
- Nov 2004-Oct 2005
  - Research Scientist, Helsinki Institute of Physics, Helsinki, Finland
- 2002-Oct 2004
  - Lise Meitner Fellow, Vienna Technical University, Vienna, Austria
- 2001-2002
  - Visiting Assistant Professor, Duke University, Durham, NC
- 1999-2001
  - Postdoctoral Researcher, University of Washington, Seattle, WA
- 1997-1999
  - Postdoctoral Researcher, Ohio State University, Columbus, OH
- 1994-1997
  - Graduate Research Assistant, Duke University, Durham, NC
- 1992-1994
  - Graduate Teaching Assistant, Duke University, Durham, NC

### *Awards, Grants, and Fellowships*

- NSF, 2022-2025
  - CyberTraining: Implementation: Small: Interactive and Integrated Training for Quantum Application Developers across Platforms, Co-PIs Q. Quan (Computer Science) and B. Dunietz (Chemistry), Award amount \$500,000.

## Professional Experience (continued)

DOE, 2022-2024	<ul style="list-style-type: none"><li>• Non-equilibrium Dynamics of the Quark Gluon Plasma (renewal), Award amount \$345,000</li></ul>
NSF, 2020-2024	<ul style="list-style-type: none"><li>• CSSI: Frameworks: X-Ion Collisions with a Statistically and Computationally Advanced Program Envelope (X-SCAPE), Award amount \$4 million, Sub-award amount \$137,000.</li></ul>
DOE, 2020-2022	<ul style="list-style-type: none"><li>• Non-equilibrium Dynamics of the Quark Gluon Plasma (renewal), Award amount \$410,000</li></ul>
TUM Global, 2019-2020	<ul style="list-style-type: none"><li>• TUM Global Incentive Award together with A. Vairo (Munich Technical University). Funds international travel between Kent State University and Munich Technical University to support mutual work on open quantum systems, Award amount 14,850 Euros</li></ul>
Kent State, 2019	<ul style="list-style-type: none"><li>• Kent State University, Excellence in Research Mentorship (awarded annually to one faculty member).</li></ul>
Kent State, 2018	<ul style="list-style-type: none"><li>• Kent State University Society of Physics Students, Excellence in Undergraduate Advising (awarded annually to one faculty member)</li></ul>
DOE, 2017-2020	<ul style="list-style-type: none"><li>• Non-equilibrium Dynamics of the Quark Gluon Plasma (renewal), Award amount \$490,000</li></ul>
DOE, 2015-2017	<ul style="list-style-type: none"><li>• Non-equilibrium Dynamics of the Quark Gluon Plasma, Award amount \$307,000</li></ul>
KSU Internal Award, 2015-2016	<ul style="list-style-type: none"><li>• The Quark Gluon Plasma in the Era of the Large Hadron Collider, Kent State University School of Arts and Sciences post-doctoral funding competition, Award amount \$56,000</li></ul>
APS Blewett Fellowship, 2015-2016	<ul style="list-style-type: none"><li>• Postdoc for Lusaka Bhattacharya, Award amount \$45,000</li></ul>
DOE, 2013-2015	<ul style="list-style-type: none"><li>• Topical Collaboration on Jet and Electromagnetic Tomography of Extreme Phases of Matter in Heavy-ion Collisions, Convenor of the Bulk Working Group, Award amount \$76,000</li></ul>
NSF Grant, 2011-2014	<ul style="list-style-type: none"><li>• RUI: Dissipative Dynamics of the Quark Gluon Plasma, Award amount \$141,000</li></ul>
KITP Scholar, 2010-2012	<ul style="list-style-type: none"><li>• Kavli Institute for Theoretical Physics (KITP) Scholar, University of California Santa Barbara</li></ul>
Lise Meitner Fellow, 2002-2004	<ul style="list-style-type: none"><li>• Austrian National Science Foundation (FWF)</li></ul>

## Teaching Details

Kent State University	
Spring 2022	<ul style="list-style-type: none"><li>• Applications of Quantum Chromodynamics (Physics 76303; Graduate Level, Text: <i>Quantum Field Theory</i>, M. Strickland)</li></ul>
Spring 2021	<ul style="list-style-type: none"><li>• Quantum Mechanics III (Physics 76163; Graduate Level; Text: <i>Quantum Field Theory</i>, M. Strickland)</li></ul>
Fall 2020	<ul style="list-style-type: none"><li>• Quantum Mechanics III (Physics 76163; Graduate Level; Text: <i>Quantum Field Theory</i>, M. Strickland)</li></ul>
Spring 2020	<ul style="list-style-type: none"><li>• Applications of Quantum Chromodynamics (Physics 76303; Graduate Level, Text: <i>Quantum Field Theory</i>, M. Strickland)</li></ul>
Fall 2019	<ul style="list-style-type: none"><li>• Particle Physics (Physics 76201; Graduate Level; Texts: <i>Quarks &amp; Leptons: An Introductory Course in Modern Particle Physics</i>, F. Halzen and A. D. Martin; <i>Introduction to Elementary Particles</i>, D. Griffiths. )</li></ul>

## Professional Experience (continued)

- Fall 2018
- Particle Physics (Physics 76201; Graduate Level; Texts: *Quarks & Leptons: An Introductory Course in Modern Particle Physics*, F. Halzen and A. D. Martin; *Introduction to Elementary Particles*, D. Griffiths. )
- Spring 2018
- Applications of Quantum Chromodynamics (Physics 76303; Graduate Level, Text: *Quantum Field Theory*, M. Strickland)
- Fall 2017
- Electromagnetic Theory (Physics 45201; Advanced Undergraduate Level; Text: *Electromagnetic Fields*, R. Wangsness)
- Spring 2016
- Physics in the Entertainment and the Arts (Physics 21040; Introductory Undergraduate Level; Text: *Physics in the Entertainment and the Arts*, S. Christensen, J. Secaur, and R. Conlon)
- Fall 2016
- Quantum Mechanics III (Physics 76163; Graduate Level; Text: *Quantum Field Theory*, M. Strickland)
- Spring 2016
- Applications of Quantum Chromodynamics (Physics 76303; Text: *Quantum Field Theory*, M. Strickland)
- Fall 2015
- Quantum Mechanics III (Physics 76163; Graduate Level; Text: *Quantum Field Theory*, M. Strickland)
- Spring 2015
- Quantum Mechanics II (Physics 76162; Graduate Level; Text: *Principles of Quantum Mechanics, 2nd Edition*, R. Shankar)
- Fall 2014
- Quantum Mechanics III (Physics 76163; Graduate Level; Text: *Quantum Field Theory*, M. Strickland)
- Spring 2014
- Quantum Mechanics II (Physics 76162; Graduate Level; Text: *Principles of Quantum Mechanics, 2nd Edition*, R. Shankar)
- Spring 2013
- Quantum Mechanics II (Physics 76162; Graduate Level; Text: *Principles of Quantum Mechanics, 2nd Edition*, R. Shankar)
  - Relativistic Quantum Field Theory (Physics 50096; Graduate Level; Text: *Quantum Field Theory*, Lewis H. Ryder)
- Postdoctoral Supervisor
- Dr. Anurag Tiwari, March 2021 - present.
  - Dr. Najmul Haque, April 2015 - April 2016.
  - Dr. Lusaka Bhattacharya, December 2014 - June 2015
  - Dr. Radoslaw Ryblewski, September 2013 - September 2014
- PhD Supervisor
- Sabin Thapa, PhD research in progress.
  - Jacob Boyd, PhD research in progress.
  - Huda Alalawi, PhD research in progress, graduation expected in Summer 2023.
  - Ajaharul Islam, PhD research in progress, graduation expected in Summer 2023.
  - Ubaid Tantary, PhD research in progress, graduation expected in Summer 2023.
  - Qianqian Du, *The resummed thermodynamics of a  $\mathcal{N} = 4$  supersymmetric Yang-Mills plasma*, PhD, Oct 2021.
  - Dekrayat Almaalol, *Non-Equilibrium Hydrodynamics Of The Quark-Gluon Plasma: From Theory To Phenomenology*, PhD, July 2021.

## Professional Experience (continued)

- Babak Kasmaei, *Nonequilibrium Probes of the Quark-Gluon Plasma*, PhD, July 2021.
- Mohammad Nopoush, *Non-equilibrium hydrodynamics of the quark-gluon plasma*, PhD, May 2019.
- Brandon Krouppa, *Quarkonium suppression using 3+1d anisotropic hydrodynamics*, PhD, Aug 2018.
- Mubarak Alqahtani, *Quasiparticle anisotropic hydrodynamics in ultra-relativistic heavy-ion collisions*, PhD, Dec 2017.
- Jeremy Alford, *Topics in Theory and Experiment in Relativistic Heavy-Ion Physics*, (co-advised with Dr. Declan Keane), PhD, Dec 2015.

### Master's Degree Supervisor

- Mohammad Yaseen, *Describing The Dynamics Of The Quark-Gluon Plasma Using Relativistic Viscous Hydrodynamics*, MS, July 2016.

### Gettysburg College

- Introductory Physics for non-science majors (Physics 101 - The Evolving Universe; Text: *Understanding Physics*, D. Cassidy, G. Holton, and J. Rutherford)
- Introductory Physics for health science majors (Physics 103; Text: *Physics: Principles with Applications, 6th ed.*, D.C. Giancoli)
- Introductory Physics II (Physics 110; Text: *Physics for Scientists and Engineers with Modern Physics*, D.C. Giancoli)
- Modern Physics Laboratory (Physics 111L and 112L)
- Math Techniques for Physicists (Physics 255; Text: *Advanced Engineering Mathematics*, M. Greenberg)
- Classical Mechanics (Physics 319; Texts: *Mechanics*, K.R. Symon and *Classical Mechanics*, T.W.B. Kibble and F.H. Berkshire)
- Advanced Electromagnetism (Physics 330 - Electromagnetism; Text: *Electromagnetic Fields*, R. Wangsness)
- Particle Physics (Physics 381; Text: *Introduction to Elementary Particles*, D. Griffiths).

### Frankfurt - PhD Supervisor

- Supervised/Co-supervised the PhD dissertations of
  - Bjoern Schenke, *Collective Phenomena in the Non-Equilibrium Quark-Gluon Plasma*, (2008). Currently holds a staff position at Brookhaven National Lab in the nuclear theory group.
  - Yun Guo, *Quarkonium States in an Anisotropic Quark-Gluon Plasma*, (2009). Currently an Associate Professor in China.
  - Mauricio Martinez-Guerrero, *Phenomenological aspects of an anisotropic quark-gluon plasma*, (2008). Currently a postdoc at North Carolina State University.
  - Nan Su, *A Gauge-Invariant Reorganization of Thermal Gauge Theory*, (2010). Currently a postdoc working at Johann Wolfgang Goethe University, Frankfurt, Germany.
  - Maximillian Attems, *Real-time evolution of a non-equilibrium non-Abelian plasma*, (2012). Currently a postdoc at University of Barcelona, Barcelona, Spain.

## Professional Experience (continued)

- Lise Meitner Fellow
  - Co-supervised the PhD dissertation work of Paul Romatschke, *Quasi-particle description of the hot and dense quark gluon plasma*, (2003). Currently an Associate Professor at University of Colorado Boulder.
- Visiting Assistant Professor
  - Taught graduate level general relativity course, Duke University, Fall 2001. Text: Wald.
- Curriculum Development
  - Undergraduate Teaching and Curriculum Development, Ohio State University Physics Education Research Group, 1997-1999.
- Private Physics Tutor
  - Duke University and Rutgers University, 1994-1997.
- Teaching Assistant
  - Graduate level Advanced Quantum Mechanics II, Spring 1994.
- Teaching Assistant
  - Graduate level Advanced Quantum Mechanics I, Fall 1993.
- Teaching Assistant
  - Undergraduate level E&M, Duke University, Spring 1993.
- Teaching Assistant
  - Undergraduate level Mechanics, Duke University, Fall 1992.

### *Service*

- US National
  - National Advisory Committee, Institute for Nuclear Theory, Seattle, 2021-
- Kent State University
  - Grant reviewer/panelist for DOE and NSF.
  - Vice Director, Center for Nuclear Research, 2019-
  - Director, Center for Nuclear Research, 2015-2019
  - College Advisory Committee (University-level), 2017-2018
  - Undergraduate Physics Advisor (Physics), 2014-
  - Graduate Program Committee (Physics), 2013-2014, 2015-2017, 2019-
  - Faculty Advisory Committee (Physics), 2013-2014, 2016-2017
- Gettysburg
  - Advisor, Society of Physics Students (SPS), 2008-2012

### *Journal Referee*

- Physical Review Letters, Nature Communications, Physics Letters B, Physical Review D, Physical Review C, Journal of High Energy Physics, Physical Review A, Nuclear Physics A, Nuclear Physics B, Journal of Physics G, The European Physical Journal C, Universe, International Journal of Modern Physics E, Acta Physica Polonica, Modern Physics Letters A, American Journal of Physics, Central European Journal of Physics, Physica Scripta

## Research Interests

- Nuclear and High Energy Theory
  - Heavy ion collisions/quark-gluon plasma (QGP)
  - Finite temperature/density quantum field theory (QFT)
  - Non-equilibrium field theory/QFT
  - Diagrammatic and field-theoretic resummation methods
  - Numerical solution of QCD Boltzmann-Vlasov equations
  - Relativistic viscous hydrodynamics
  - QCD equation of state at high-temperatures
  - Non-perturbative QFT
- Astrophysics
  - QCD equation of state at high-temperatures

## Research Interests (continued)

- QCD equation of state at low-temperatures and high densities
  - Neutron star evolution
  - Thermalization and reheating of the universe
- Atomic Physics
- Bose-Einstein condensation
  - Critical behavior of low-temperature atomic gases
- General
- Relativistic viscous hydrodynamics
  - Relativistic dynamics beyond viscous hydrodynamics
  - Functional renormalization group methods

## Publications

### *Preprints*

- M. Alqahtani and M. Strickland, Kaonic Hanbury-Brown-Twiss radii at 200 GeV and 5.02 TeV, arXiv:2209.10894.
- W. Fan et al. (Jetscape Theory Collaboration), Multi-scale evolution of charmed particles in a nuclear medium, arXiv:2208.00983.
- A. Kumar et al. (Jetscape Theory Collaboration), Inclusive Jet and Hadron Suppression in a Multi-Stage Approach, arXiv:2204.01163.
- M. Alqahtani, N. Demir, and M. Strickland, Nonextensive hydrodynamics of boost-invariant plasmas, arXiv:2203.14968.
- D. Everett et al. (Jetscape Theory Collaboration), Role of bulk viscosity in deuteron production in ultrarelativistic nuclear collisions, arXiv:2203.08286.

### *Refereed Journal Articles*

2022

- L. Dong, Y. Guo, A. Islam, A. Rothkopf, and M. Strickland, The complex heavy-quark potential in an anisotropic quark-gluon plasma - Statics and dynamics, J. High Energ. Phys. 2022, 200 (2022).
- N. Brambilla, M. Escobedo, A. Islam, M. Strickland, A. Tiwari, A. Vairo, and P. Vander Griend, Heavy quarkonium dynamics at next-to-leading order in the binding energy over temperature, J. High Energ. Phys. 2022, 303 (2022).
- Q. Du, M. Strickland, and U. Tantary, Scheme dependence of two-loop HTLpt-resummed  $\text{SYM}_{4,4}$  thermodynamics, Phys. Rev. D 105, 074004 (2022).
- H. Alalawi, M. Alqahtani, and M. Strickland, Resummed relativistic dissipative hydrodynamics, Symmetry 2022, 14(2), 329 (2022).
- H. Ba Omar, M. Escobedo, A. Islam, M. Strickland, S. Thapa, P. Vander Griend, and J. Weber, QTRAJ 1.0: A Lindblad equation solver for heavy-quarkonium dynamics, Computer Physics Communications 273, 108266 (2022).
- J.O. Andersen, Q. Du, M. Strickland, and U. Tantary,  $\mathcal{N} = 4$  supersymmetric Yang-Mills thermodynamics from effective field theory, Phys. Rev. D 105, 015006 (2022).

## Publications (continued)

- R.L. Delgado, S. Steinbeißer, M. Strickland, and J.H. Weber, The relativistic Schrödinger equation through FFTW3: An extension of quantumfdtd, Computer Physics Communications, 272, 108250 (2022).
- 2021
- N. Brambilla, M. Escobedo, M. Strickland, A. Vairo, P. Vander Griend, and J. Weber, Bottomonium production in heavy-ion collisions using quantum trajectories: Differential observables and momentum anisotropy, Phys. Rev. D 104, 094049 (2021).
  - L. Dong, Y. Guo, A. Islam, and M. Strickland, Effective Debye Screening Mass in an Anisotropic Quark Gluon Plasma, Phys. Rev. D 104, 096017 (2021).
  - M. Alqahtani and M. Strickland, Bulk observables at 5.02 TeV using quasi-particle anisotropic hydrodynamics, Eur. Phys. J. C 81, 1022 (2021).
  - K. Boguslavski, B. Kasmaei, and M. Strickland, The imaginary part of the heavy-quark potential from real-time Yang-Mills dynamics, J. High Energ. Phys. 2021, 83 (2021).
  - Q. Du, M. Strickland, and U. Tantary,  $\mathcal{N} = 4$  supersymmetric Yang-Mills thermodynamics to order  $\lambda^2$ , J. High Energ. Phys. 2021, 64 (2021).
  - P.P. Bhaduri, M. Alqahtani, N. Borghini, A. Jaiswal, and M. Strickland, Fireball tomography from bottomonia elliptic flow in relativistic heavy-ion collisions, Eur. Phys. J. C 81, 585 (2021).
  - N. Brambilla, M. Escobedo, M. Strickland, A. Vairo, P. Vander Griend, J. Weber, Bottomonium suppression in an open quantum system using the quantum trajectories method, J. High Energ. Phys. 2021, 136 (2021).
  - N. Haque and M. Strickland, NNLO HTLpt predictions for the curvature of the QCD phase transition line, Phys. Rev. C 103, 031901 (2021).
  - A. Islam and M. Strickland, Bottomonium suppression and elliptic flow using Heavy Quarkonium Quantum Dynamics, J. High Energ. Phys. 2021, 235 (2021).
- 2020
- H. Alalawi and M. Strickland, An improved anisotropic hydrodynamics ansatz, Phys. Rev. C 102, 064904 (2020).
  - M. Alqahtani and M. Strickland, Pion interferometry at 200 GeV using anisotropic hydrodynamics, Phys. Rev. C 102, 064902 (2020).
  - A. Islam and M. Strickland, Bottomonium suppression and elliptic flow from real-time quantum evolution, Phys. Lett. B., 811, 135949 (2020).
  - J. Ghiglieri, A. Kurkela, M. Strickland, and A. Vuorinen, Perturbative Thermal QCD: Formalism and Applications, Phys. Reports, 880, 1-73 (2020).
  - D. Almaalol, A. Kurkela, and M. Strickland, Non-equilibrium attractor in high-temperature QCD plasmas, Phys. Rev. Lett. 125, 122302 (2020).
  - Q. Du, M. Strickland, U. Tantary, and B.-W. Zhang, Two-loop HTL-resummed thermodynamics for  $\mathcal{N} = 4$  supersymmetric Yang-Mills theory, Journal of High Energy Physics 2020, 38 (2020).
  - B. Kasmaei and M. Strickland, Photon production and elliptic flow from momentum-anisotropic quark-gluon plasma, Phys. Rev. D 102, 014037 (2020).

## Publications (continued)

- 2019
- M. Strickland et al., Future physics opportunities for high-density QCD at the LHC with heavy-ion and proton beams, CERN Yellow Rep. Monogr., 1159-1410 (2019).
  - P.P. Bhaduri, N. Borghini, A. Jaiswal, and M. Strickland, Anisotropic escape mechanism and elliptic flow of bottomonia, Phys. Rev. C 100, 051901 (R) (2019).
  - J. Boyd, T. Cook, A. Islam, and M. Strickland, Heavy quarkonium suppression beyond the adiabatic limit, Phys. Rev. D 100, 076019 (2019).
  - M. Strickland and U. Tantary, Exact solution for the non-equilibrium attractor in number-conserving relaxation time approximation, JHEP 2019, 69 (2019).
  - M. Nopoush and M. Strickland, Including off-diagonal anisotropies in anisotropic hydrodynamics, Phys. Rev. C 100, 014904 (2019).
  - D. Almaalol, M. Alqahtani, and M. Strickland, Anisotropic hydrodynamic modeling of 200 GeV Au-Au collisions, Phys. Rev. C 99, 044902 (2019).
  - B. Kasmaei and M. Strickland, Dilepton production and elliptic flow from an anisotropic quark-gluon plasma, Phys. Rev. D 99, 034015 (2019).
  - D. Almaalol, M. Alqahtani, and M. Strickland, Anisotropic hydrodynamics with number-conserving kernels, Phys. Rev. C 99, 014903 (2019).
- 2018
- M. Strickland, The non-equilibrium attractor for kinetic theory in relaxation time approximation, Journal High Energy Physics 2018, 128 (2018).
  - M. Alqahtani, M. Nopoush, and M. Strickland, Relativistic anisotropic hydrodynamics, Progress in Particle and Nuclear Physics, Volume 101, 204 (2018).
  - D. Almaalol and M. Strickland, Anisotropic hydrodynamics with a scalar collisional kernel, Phys. Rev. C 97, 044911 (2018).
  - B. Kasmaei and M. Strickland, Parton self-energies for general momentum-space anisotropy, Phys. Rev. D 97, 054022 (2018).
  - D. Bazow, U.W. Heinz, and M. Strickland, Massively parallel simulations of relativistic fluid dynamics on graphics processing units with CUDA, Comp. Phys. Comm. 225, 92-113 (2018).
  - M. Strickland, J. Noronha, and G. Denicol, The anisotropic non-equilibrium hydrodynamic attractor, Phys. Rev. D 97, 036020 (2018).
  - B. Krouppa, A. Rothkopf, and M. Strickland, Bottomonium suppression using a lattice QCD vetted potential, Phys. Rev. D 97, 016017 (2018).
- 2017
- M. Alqahtani, M. Nopoush, R. Ryblewski, and M. Strickland, Anisotropic hydrodynamic modeling of 2.76 TeV Pb-Pb collisions, Phys. Rev. C 96, 044910 (2017).
  - M. Nopoush, Y. Guo, and M. Strickland, The static hard-loop gluon propagator to all orders in anisotropy, Journal of High Energy Physics, 2017, 63 (2017).
  - M. Alqahtani, M. Nopoush, R. Ryblewski, and M. Strickland, 3+1d quasi-particle anisotropic hydrodynamics for ultrarelativistic heavy-ion collisions, Phys. Rev. Lett. 119, 042301 (2017).
  - S. Mrowczynski, B. Schenke, and M. Strickland, Physics Reports 682, 1-97 (2017).



## Publications (continued)

- G. Baym, T. Hatsuda, and M. Strickland, Virtual photon polarization in ultrarelativistic heavy-ion collisions, *Phys. Rev. C* 95, 044907 (2017).
  - M. Alqahtani, M. Nopoush, and M. Strickland, Quasiparticle anisotropic hydrodynamics for central collisions, *Phys. Rev. C* 95, 034906 (2017).
  - Q. Du, A. Dumitru, Y. Guo, and M. Strickland, Bulk viscous corrections to screening and damping in QCD at high temperatures, *Journal of High Energy Physics*, 123 (2017).
- 2016
- W. Florkowski, R. Ryblewski, M. Strickland, and L. Tinti, Non-boost-invariant dissipative hydrodynamics, *Phys. Rev. C* 94, 064903 (2016).
  - B. Kasmaei, M. Nopoush, and M. Strickland, Quark self-energy in an ellipsoidally anisotropic quark-gluon plasma, *Phys. Rev. D* 94, 125001 (2016).
  - B. Krouppa and M. Strickland, Predictions for bottomonia suppression in 5.023 TeV Pb-Pb collisions, *Universe* 2016, 2(3), 16 (2016).
  - J.O. Andersen, N. Haque, M.G. Mustafa, and M. Strickland, Three-loop HTLpt thermodynamics at finite temperature and isospin chemical potential, *Phys. Rev. D* 93, 054045 (2016).
  - M. Strickland, et al. (SaporaGravis network – Heavy flavour working group), Heavy-flavour and quarkonium production in the LHC era: from proton-proton to heavy-ion collisions, *The European Physical Journal C*, 76:107 (2016).
  - A. Bandyopadhyay, N. Haque, M.G. Mustafa, and M. Strickland, Dilepton rate and quark number susceptibility with the Gribov action, *Phys. Rev. D* 93, 065004 (2016).
  - L. Bhattacharya, R. Ryblewski, and M. Strickland, Photon production from a non-equilibrium quark-gluon plasma, *Phys. Rev. D* 93, 065005 (2016).
  - L. Tinti, R. Ryblewski, W. Florkowski, and M. Strickland, Testing different formulations of leading-order anisotropic hydrodynamics, *Nuclear Physics A* 946, 29-48 (2016).
- 2015
- B. Krouppa, R. Ryblewski, and M. Strickland, Bottomonia suppression in 2.76 TeV Pb-Pb collisions, *Phys. Rev. C* 92, 061901(R) (2015).
  - M. Alqahtani, M. Nopoush, and M. Strickland, Quasiparticle equation of state for anisotropic hydrodynamics, *Phys. Rev. C* 92, 054910, (2015).
  - M. Nopoush, M. Strickland, R. Ryblewski, D. Bazow, U. Heinz, and M. Martinez, Leading-order anisotropic hydrodynamics for central collisions, *Phys. Rev. C* 92, 044912 (2015).
  - R. Ryblewski and M. Strickland, Dilepton production from the quark-gluon plasma using (3+1)-dimensional anisotropic dissipative hydrodynamics, *Phys. Rev. D* 92, 025026 (2015).
  - W. Florkowski, A. Jaiswal, E. Maksiymiuk, R. Ryblewski, M. Strickland, Relativistic quantum transport coefficients for second-order viscous hydrodynamics, *Phys. Rev. C* 91, 054907 (2015).
  - M. Strickland, Thermalization and isotropization in heavy-ion collisions, *Pramana Vol. 84, No. 5*, 671 (2015).
  - M. Nopoush, R. Ryblewski, and M. Strickland, Anisotropic hydrodynamics for conformal Gubser flow, *Phys. Rev. D* 91, 045007 (2015).

## Publications (continued)

2014

- G.S. Denicol, U.W. Heinz, M. Martinez, J. Noronha, and M. Strickland, Studying the validity of relativistic hydrodynamics with a new exact solution of the Boltzmann equation, To appear in PRD, Phys. Rev. D 90, 125026 (2014).
- D. Bazow, U.W. Heinz, and M. Strickland, Second-order (2+1)-dimensional anisotropic hydrodynamics, Phys. Rev. C 90, 054910 (2014).
- G.S. Denicol, U.W. Heinz, M. Martinez, J. Noronha, and M. Strickland, A new exact solution of the relativistic Boltzmann equation and its hydrodynamic limit, Phys. Rev. Lett. 113, 202301 (2014).
- A. Jaiswal, R. Ryblewski, and M. Strickland, Transport coefficients for bulk viscous evolution in the relaxation time approximation, Phys. Rev. C 90, 044908 (2014).
- G.S. Denicol, W. Florkowski, R. Ryblewski, and M. Strickland, Shear-bulk coupling in nonconformal hydrodynamics, Phys. Rev. C 90, 044905 (2014).
- M. Nopoush, R. Ryblewski, and M. Strickland, Bulk viscous evolution within anisotropic hydrodynamics, Phys. Rev. C 90, 014908 (2014).
- W. Florkowski, R. Ryblewski, M. Strickland, and A. Tinti, Leading-order anisotropic hydrodynamics for systems with massive particles, Phys. Rev. C 89, 054909 (2014).
- W. Florkowski, E. Maksymiuk, R. Ryblewski, and M. Strickland, Exact solution of the (0+1)-dimensional Boltzmann equation for a massive gas, Phys. Rev. C 89, 054908 (2014).
- N. Haque, A. Bandyopadhyay, J.O. Andersen, M.G. Mustafa, M. Strickland, and N. Su, Three-loop HTLpt thermodynamics at finite temperature and chemical potential, Journal of High Energy Physics 2014, 5, 1-46 (2014).
- N. Haque, J.O. Andersen, M.G. Mustafa, M. Strickland, and N. Su, Three-loop HTLpt Pressure and Susceptibilities at Finite Temperature and Density, Phys. Rev. D 89, 061701(R) (2014).
- V. Dexheimer, D. P. Menezes, and M. Strickland, The influence of strong magnetic fields on proto-quark stars, J. Phys. G: Nucl. Part. Phys. 41, 015203 (2014).

2013

- S. Mogliacci, J.O. Andersen, M. Strickland, N. Su, and A. Vuorinen, Equation of State of hot and dense QCD: Resummed perturbation theory confronts lattice data, Journal of High Energy Physics 2013, 12, 1 (2013).
- J. Alford and M. Strickland, Charmonia and Bottomonia in a Magnetic Field, Phys. Rev. D 88, 105017 (2013).
- W. Florkowski, R. Ryblewski, and M. Strickland, Anisotropic Hydrodynamics for Rapidly Expanding Systems, Nuclear Physics A 916, 249 (2013).
- C.S. Machado, F.S. Navarra, E.G. de Oliveira, J. Noronha, and M. Strickland, Heavy quarkonium production in a strong magnetic field, Phys. Rev. D 88, 034009 (2013).
- W. Florkowski, R. Ryblewski, and M. Strickland, Testing viscous and anisotropic hydrodynamics in an exactly solvable case, Phys. Rev. C 88, 024903 (2013).
- N. Haque, M.G. Mustafa, and M. Strickland, Quark Number Susceptibilities from Two-Loop Hard Thermal Loop Perturbation Theory, Journal of High Energy Physics 2013, 7, 184 (2013).

## Publications (continued)

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- 2010 • M. Martinez and M. Strickland, Matching pre-equilibrium dynamics and viscous hydrodynamics, *Phys. Rev. C* 81, 024906 (2010).
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  - M. Martinez and M. Strickland, Pre-equilibrium dilepton production from an anisotropic quark-gluon plasma, *Phys. Rev. C* 78, 034917 (2008).
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  - J.O. Andersen and M. Strickland, The Equation of State for Dense QCD and Quark Stars, *Phys. Rev. D* **66**, 105001 (2002).
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  - W. Fan et al. (Jetscape Theory Collaboration), Bayesian analysis of QGP jet transport using multi-scale modeling applied to inclusive hadron and reconstructed jet data, Quark Matter 2022 proceedings, arXiv:2208.07950.
  - D. Almaalol, K. Boguslavski, A. Kurkela, and M. Strickland, Non-equilibrium attractor in high-temperature QCD plasmas, Quark Matter 2022 proceedings, arXiv: 2208.00513.
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  - M. Strickland, Bottomonium suppression and flow in heavy-ion collisions, Plenary contribution for Strangeness in Quark Matter, EPJ Web of Conferences 259, 04001 (2022).
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  - N. Su, J.O. Andersen, and M. Strickland, Hard-thermal-loop QED thermodynamics, *Chinese Physics C* 34 (09), 1527 (2010).
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- M. Martinez and M. Strickland, Dilepton production as a measure of QGP thermalization time, *Contribution to 20th International Conference on Ultrarelativistic Nucleus-Nucleus Collisions: Quark Matter 2008 (QM 2008)*, Jaipur, India, *J. Phys. G: Nucl. Part. Phys.* 35 104162 (2008).
  - B. Schenke, A. Dumitru, Y. Nara and M. Strickland, QGP collective effects and jet transport, *Contribution to 20th International Conference on Ultrarelativistic Nucleus-Nucleus Collisions: Quark Matter 2008 (QM 2008)*, Jaipur, India, *J. Phys. G: Nucl. Part. Phys.* 35 104109 (2008).



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- M. Strickland, Thermalization and plasma instabilities, Proceedings contribution for invited talk at International Conference on Strong & Electroweak Matter 2006, Brookhaven National Laboratory, Upton, NY, Nucl. Phys. A785, 50 (2006).
  - M. Strickland, The chromo-Weibel instability, Proceedings contribution for an invited talk at the International Symposium on Multiparticle Dynamics, Paraty, Rio de Janeiro, Brazil, Sept 2-8 2006, Braz. J. Phys., June 2007, vol.37, no.2c, p.762-766 (2006).
  - M. Strickland, Thermalization and the chromo-Weibel instability, Invited plenary talk given at the 19th International Conference on Ultrarelativistic Nucleus-Nucleus Collisions: Quark Matter 2006 (QM 2006), Shanghai, China, 14-20 Nov, J. Phys. G: Nucl. Part. Phys. 34 S429-S435 (2006).
- 2005
- M. Strickland, Hard-Loop Dynamics of Non-Abelian Plasma Instabilities, Contribution to Proceedings of Quark Matter 2005, Budapest, Hungary Aug 4-9, Nucl.Phys. A774 (2006) 779-782 (2005).
  - M. Strickland, Visualizing Color Plasma Instabilities, Contribution to Quark-Gluon-Plasma Thermalization Workshop, Vienna, Austria Aug 10-13, (2005).
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- P. Romatschke and M. Strickland, Progress in Anisotropic Plasma Physics, Proceedings of Strong and Electroweak Matter 2004, Helsinki, Finland, hep-ph/0408314 (2004).
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- M. Strickland, Reorganizing Perturbation Theory - Part I. Scalar Theories, Proceedings of the Annual meeting of the APS Division of Particle and Fields Meeting, Ohio State University, October (2000).
  - M. Strickland, Reorganizing Perturbation Theory - Part II. Gauge Theories, Proceedings of the In and Out of Equilibrium Workshop, Brookhaven National Labs, October (2000).
- 1998
- J.O. Andersen and M. Strickland, Critical Behaviour of a Homogeneous Bose Gas at Finite Temperature, 5th Proceeding of the International Workshop on Thermal Field Theories and Their Applications, Regensburg, Germany, 10-14 Aug 1998.
  - M. Strickland, Non-Perturbative QED and QCD at Finite Temperature, Proceedings of the Fourth Workshop on Quantum Chromodynamics, 1-6 June 1998, The American University of Paris, Paris, France.
- 1995
- M. Pichowsky, M. Strickland, and M. Kennedy, Two-body bound states & the Bethe-Salpeter equation, HUGS@CEBAF Proceedings, (1995).
  - M. Strickland, Deuteron photodisintegration above pion threshold, HUGS@CEBAF Proceedings, (1995).

## Books

- 2019
- M. Strickland, Relativistic Quantum Field Theory, Volume 1: Canonical Formalism, Institute of Physics (Morgan & Claypool), 175 pp. (2019).
  - M. Strickland, Relativistic Quantum Field Theory, Volume 2: Path Integral Formalism, Institute of Physics (Morgan & Claypool), 171 pp. (2019).
  - M. Strickland, Relativistic Quantum Field Theory, Volume 3: Path Integral Formalism, Institute of Physics (Morgan & Claypool), 166 pp. (2019).

## Publications (continued)

- 1995 • B. Müller, J. Reinhardt and M. Strickland, Neural Networks: An Introduction, Springer-Verlag, 300 pp. (1995).

### *Dissertation*

- 1997 • M. Strickland, Dynamical Mass Generation and Confinement at Finite Temperature, PhD Dissertation, Duke University (1997).

### *Publication statistics*

- Google Scholar (Aug 18, 2022) • 12,859 citations  
• h-Index: 66  
• i10-Index: 137

## Seminars (since 2001)

- 2022 • Bottomonium suppression in the QGP – From EFTs to non-unitary quantum evolution, Transport Theory Seminar, Institute for Theoretical Physics, Johann Wolfgang Goethe University, Frankfurt am Main, September 2022.  
• Bottomonium suppression in the QGP – From EFTs to non-unitary quantum evolution, Saha Institute for Theoretical Physics, August 2022. **Colloquium**  
• Review and future prospects of quarkonia at LHC, CMS heavy ion workshop, CERN, August 2022. **Invited talk**  
• Non-equilibrium evolution of quarkonium in medium in the open quantum system approach, XVth Confinement and the Hadron Spectrum, Stavanger, Norway, August 2022. **Invited plenary talk**  
• NNLO HTLpt predictions for the curvature of the QCD phase transition line, XVth Confinement and the Hadron Spectrum, Stavanger, Norway, August 2022.  
• Heavy quarkonium dynamics at next-to-leading order in the binding energy over temperature, QCD in Extreme Conditions (XQCD) 2022, Trondheim, Norway, July 2022. **Invited plenary talk**  
• Bottomonium suppression at RHIC and LHC, RBRC Workshop - Predictions for sPHENIX, July 2022. **Invited talk**  
• Resummed thermodynamics of QCD and N=4 supersymmetric Yang-Mills theory (poster), Quark Matter 22, April 2022.  
• Anisotropic Hydrodynamics, RHIC BES Seminar (virtual), March 2022. **Invited talk**  
• Bottomonium suppression in the QGP – From EFTs to non-unitary quantum evolution, FRIB/NSCL Nuclear Theory Seminar, Feb 2022.  
• An introduction to resummed dissipative hydrodynamics II, Center for Nuclear Research Seminar, Kent State University, Feb 2022.  
• Bottomonium suppression from numerical solutions to the Lindblad equation at LO and NLO, YOUNGST@RS - The Quantumness of hard probes, Mainz Institute for Theoretical Physics, Johannes Gutenberg University, Jan 2022. **Invited talk**  
• Quantum chromodynamics at 7 trillion Kelvin, Pabna University of Science and Technology, Online colloquium, Jan 2022. **Colloquium**
- 2021 • An introduction to resummed dissipative hydrodynamics, Center for Nuclear Research Seminar, Kent State University, Dec 2021.  
• Bottomonium suppression in heavy-ion collisions, Center for Nuclear Research Seminar, Kent State University, Sept 2021.  
• Bottomonium suppression and elliptic flow in heavy-ion collisions, Hadrons 2021, 19th International Conference on Hadron Spectroscopy and Structure, Mexico City (Virtual), July 2021.

## Seminars (since 2001) (continued)

- Bottomonium suppression in heavy-ion collisions, Quarkonia meet Dark Matter (Virtual), June 2021. **Invited talk**
  - Dilepton emission from a non-equilibrium QGP – Background, ALICE workshop on a next-generation heavy-ion experiment for LHC Run 5 and beyond: ALICE 3 (Virtual), June 2021. **Invited talk**
  - Bottomonium suppression in the QGP - From EFTs to non-unitary quantum evolution, Workshop on QGP Phenomenology (Virtual), May 2021. **Invited talk**
  - Bottomonium suppression in the QGP: From EFTs to non-unitary quantum evolution, Arizona State University Theoretical Physics Colloquium (Virtual), May 2021.
  - Bottomonium suppression in an open quantum system using the quantum trajectories method, APS April Meeting (Virtual), April 2021. **Invited talk**
  - Bottomonium suppression in an open quantum system, Quarkonium Working Group (Virtual), March 2021. **Invited talk**
  - Non-equilibrium attractor in high-temperature QCD plasmas, LBNL Heavy Ion Theory (HIT) Seminar (Virtual), February 2021.
  - New theoretical developments, Initial Stages 2021, Weizmann Institute of Science (Virtual), January 2021. **Invited talk**
- 2020
- Relativistic hydrodynamics in the quark-gluon plasma, Oberwolfach Mini-Workshop on Relativistic Fluids, Mathematisches Forschungsinstitut Oberwolfach (MFO), Oberwolfach-Walke, Germany (Virtual), December 2020. **Invited talk**
  - Bottomonium suppression and elliptic flow from real-time quantum evolution, 20th Zimanyi School Winter Workshop, Budapest, Hungary (Virtual), December 2020. **Invited talk**
  - Computing the imaginary part of the heavy quark potential using classical- statistical Yang-Mills evolution, Munich EFT Seminar, Munich, Germany (Virtual), December 2020.
  - Bottomonium suppression and elliptic flow from real-time quantum evolution, XXXII International Workshop on High Energy Physics, Moscow, Russia (Virtual), November 2020. **Invited talk**
  - Non-equilibrium attractor in high-temperature QCD plasmas, ICTS Program: Extreme Non-Equilibrium QCD, TATA Institute, Bangalore, India (Virtual), October 2020. **Invited talk**
  - The KSU quarkonium effort: A review of the past and a step towards the future (HQQD), CERN, ALICE Review Panel Seminar (Virtual), October 2020. **Invited talk**
  - Bottomonium suppression in the quark-gluon plasma, Sharif University of Technology, High-Energy Physics Seminar, Tehran, Iran (Virtual), July 2020.
  - Non-equilibrium attractor in high-temperature QCD plasmas, Particle Theory Seminar, University of Santiago de Compostela, Spain (Virtual), May 2020.
  - Non-equilibrium attractor in high-temperature QCD plasmas, Duke University Nuclear/Particle Seminar, Durham, NC (Virtual), April 2020.
  - Non-equilibrium attractor in high-temperature QCD plasmas, IAU/KU Virtual High-Energy Physics Colloquium, Dammam, Saudi Arabia (Virtual), April 2020. **Colloquium**
  - Bottomonium suppression in the quark-gluon plasma, Kent State University, Kent, OH, USA (Virtual), April 2020. **Colloquium**
  - Pseudothermalization of the quark-gluon plasma, 36th Winter Workshop on Nuclear Dynamics, Puerto Vallarta, Mexico, Mar 2020. **Invited talk**
  - Bottomonium suppression in the quark-gluon plasma, Guangxi Normal University, Guilin, China, Jan 2020. **Invited lecture**
- 2019
- Quantum chromodynamics at 7 trillion Kelvin, Nanjing University, Nanjing, China, Dec 2019. **Invited lecture**
  - Bottomonium regeneration in the KSU approach, GSI Helmholtzzentrum für Schwerionenforschung, Germany, Dec 2019. **Invited talk**
  - Bottomonium break-up rates in the KSU approach, GSI Helmholtzzentrum für Schwerionenforschung, Germany, Dec 2019. **Invited talk**
  - Phenomenological modeling of quarkonium in QGP and scope of RRTE, GSI Helmholtzzentrum für Schwerionenforschung, Germany, Dec 2019. **Invited talk**

## Seminars (since 2001) (continued)

- Bottomonium suppression in the quark-gluon plasma, Wayne State University, Detroit, MI, USA, Dec 2019. **Colloquium**
  - Pseudothermalization of the QGP, Theoretical Foundations of Relativistic Hydrodynamics, Banff International Research Station, Banff, Canada, Nov 2019. **Invited talk**
  - The non-equilibrium attractor: Beyond Hydrodynamics, Theoretical Physics Seminar, Vienna Technical University, Vienna, Austria, July 2019.
  - The non-equilibrium attractor: Beyond Hydrodynamics, EFT Seminar, Munich Technical University, Munich, Germany, July 2019.
  - The non-equilibrium attractor: Beyond Hydrodynamics, NT/RIKEN Seminar, Brookhaven National Laboratory, New York, May 2019.
  - Quantum Chromodynamics at Five Trillion Degrees Kelvin, Imam Abdulrahman Bin Faisal University Dammam, Saudi Arabia, April 2019. **Colloquium**
  - Bottomonium suppression and azimuthal anisotropy, 13th International Workshop on High-pT Physics in the RHIC/LHC era, University of Tennessee, Knoxville, TN, March 2019. **Invited talk**
  - The non-equilibrium attractor: Hydrodynamics and beyond, Hirscheegg 2019: From QCD matter to hadrons, International Workshop XLVII on Gross Properties of Nuclei and Nuclear Excitations Hirscheegg, Kleinwalsertal, Austria, January 2019. **Invited talk**
  - The anisotropic nonequilibrium attractor: Pseudothermalization beyond hydrodynamics, XV Cracow EIPPHANY Conference on Advances in Heavy Ion Physics, Henryk Niewodniczanski Institute of Nuclear Physics Polish Academy of Sciences (IFJ PAN), Crakow, Poland, January 2019. **Invited talk**
- 2018
- Hard Thermal Loop Resummation of the QCD Equation of State II, Kent State University, CNR Seminar, October 2018.
  - Hard Thermal Loop Resummation of the QCD Equation of State I, Kent State University, CNR Seminar, October 2018.
  - The static hard-loop gluon propagator to all orders in anisotropy, Probing The Quark-Gluon Plasma With Collective Phenomena And Heavy Quarks, Munich Institute for Astro- and Particle Physics, Munich, Germany, September 2018. **Invited talk**
  - Quarkonia overview, RHIC and AGS Annual Users Meeting, Brookhaven National Lab, NY, June 2018. **Invited talk**
  - Small systems: A theory overview, Quark Matter 2018, Lido Island, Venice, Italy, May 2018. **Plenary talk**
  - The non-equilibrium hydrodynamic attractor, ECT\*, Trento, Italy, May 2018. **Invited talk**
  - The static hard-loop gluon propagator to all orders in anisotropy, Fire and ice: Hot QCD meets cold and dense matter, Saariselkä, Finland, April 2018. **Invited talk**
  - Quarkonium suppression in the quark-gluon plasma, University of Illinois at Chicago, Chicago, IL USA, March 2018. **Colloquium**
  - Anisotropic Hydrodynamics, University of Illinois at Chicago, High Energy Physics Seminar, Chicago, IL USA, March 2018.
  - Quarkonium suppression in the quark-gluon plasma, Vanderbilt University, Nashville, TN USA, February 2018. **Colloquium**
- 2017
- Anisotropic Hydrodynamics – Theory and Phenomenology, Institute for Theoretical Physics, Peking University, Beijing, China, November 2017.
  - Bottomonium production in AA collisions, 12th International Workshop on Heavy Quarkonium, Peking University, Beijing, China, November 2017. **Invited talk**
  - Hard-thermal-loop resummation of QCD thermodynamics, Hadrons and Their Properties as a Problem in Strong QCD, Peking University, Beijing, China, October 2017. **Invited talk**
  - Momentum anisotropy in the quark-gluon plasma, Initial Stages 2017, Krakow, Poland, September 2017. **Invited talk**
  - Physics of the quark-gluon plasma, Third Andean School on Nuclear Physics, Bogota, Columbia, August 2017. **Invited Lectures (3)**
  - Quasiparticle anisotropic hydrodynamics, Canterbury Tales of Hot QFTs in the LHC Era, St. John's College, Oxford University, UK, July 2017. **Invited talk**

## Seminars (since 2001) (continued)

- Quasiparticle anisotropic hydrodynamics, Frankfurt Institute for Advanced Studies, Frankfurt am Main, DE, Theoretical Physics Seminar, July 2017.
  - Quasiparticle anisotropic hydrodynamics, Giessen University, Giessen, DE, Theoretical Physics Seminar, July 2017.
  - 3+1d quasiparticle anisotropic hydrodynamics for ultrarelativistic heavy-ion collisions, Triangle Nuclear Theory Seminar, North Carolina State University, April 2017.
  - Bottomonia suppression in heavy-ion collisions, Quark Matter 2017, Chicago, USA, February 2017.
  - Three lectures on hard-thermal-loop perturbation theory and anisotropic hydrodynamics, XVIII Escola de Verao Jorge Andre Swieca Fisica Nuclear Teorica, Maresias, Brazil, February 2017. **Invited Lectures (3)**
- 2016
- Is the QGP created in heavy ion collisions in local thermal equilibrium?, 12th Polish Workshop on Relativistic Heavy-Ion Collisions, Kielce, Poland, November 2016. **Invited talk**
  - 3+1d Anisotropic Hydrodynamics - Phenomenological applications, Relativistic Hydrodynamics: Theory and Modern Applications, Mainz Institute for Theoretical Physics, October 2016. **Invited talk**
  - Quarkonia production (with a focus on bottomonia), Hard Probes, Wuhan, China, September 2016. **Plenary talk**
  - Anisotropic Hydrodynamics, Confinement XII, Thessaloniki, Greece, August 2016. **Invited talk**
  - An introduction to relativistic dissipative hydrodynamics, STAR Collaboration Meeting – Junior Day, Ohio State University, August 2016. **Invited Lecture (1)**
  - Bottomonium suppression at LHC, The 11th International Workshop on Heavy Quarkonium 2016, Pacific Northwest National Laboratory, June 2016. **Invited talk**
  - Phenomenology of quarkonia suppression in heavy ion collisions, American Physical Society Meeting, Salt Lake City, Utah, April 2016. **Invited talk**
  - Melting the Universe, Lehigh University, Physics colloquium, Bethlehem, PA, April 2016. **Colloquium**
  - Anisotropic Hydrodynamics, Liquid Crystal Insitute, Kent, Ohio, March 2016. **Invited talk**
  - Melting the Universe, Agnes Scott College, Decatur, Georgia, February 2016. **Colloquium**
  - Anisotropic Hydrodynamics, Saha Institute for Nuclear Physics, Theory Seminar, Kolkatta, India, February 2016. **Invited talk**
  - Bottomonium Suppression at the LHC, Heavy Quark Meet II, Saha Institute for Nuclear Physics, Theory Seminar, Kolkatta, India, February 2016. **Invited talk**
  - Anisotropic Hydrodynamics: A progress report, Opportunities for Exploring Longitudinal Dynamics in Heavy Ion Collisions at RHIC, RIKEN BNL Research Center, January 2016. **Invited talk**
- 2015
- Photon production from a momentum-space anisotropic QGP, New Perspectives on Photons and Dileptons in Ultrarelativistic Heavy-Ion Collisions at RHIC and LHC, ECT\*, Trento, Italy, December 2015. **Invited talk**
  - The equation of state of QCD at finite temperature and chemical potential, New Progress in Heavy Ion Collisions: What is Hot in the QGP, Central China Normal University, Wuhan, China, October 2015. **Invited Lectures (3)**
  - Anisotropic hydrodynamics for conformal Gubser flow, Quark Matter 2015, Kobe, Japan, September 2015.
  - The equation of state of QCD at finite temperature and chemical potential, Brookhaven National Lab, Nuclear Theory Seminar, Upton, NY, September 2015. **Invited talk**
  - Anisotropic hydrodynamics for conformal Gubser flow, Institute for Nuclear Theory, University of Washington, August 2015.
  - Exact solution to the RTA Boltzmann equation subject to Gubser flow, Institute for Nuclear Theory, University of Washington, July 2015.
  - Dilepton and photon production using (3+1)D anisotropic hydrodynamics, Hard Probes 2015, Montreal, Canada, July 2015.
  - Anisotropic Hydrodynamics, sQGP and extreme QCD workshop, Kavli Institute for Theoretical Physics, Beijing, China, June 2015. **Invited talk**
  - Testing dissipative hydrodynamics using exact solutions of the Boltzmann equation, sQGP and extreme QCD workshop, Kavli Institute for Theoretical Physics, Beijing, China, June 2015. **Invited talk**

## Seminars (since 2001) (continued)

- The equation of state of QCD at finite temperature and chemical potential, Tsinghua University, Beijing, China, May 2015. **Invited talk**
  - Bottomonia production in AA collisions, 6th Workshop of the APS Topical Group on Hadronic Physics, April 2015. **Invited talk**
  - Quantum Chromodynamics at Five Trillion Degrees Kelvin, The Ohio State University, January 2015. **Colloquium**
  - Charmonia and Bottomonia in a Magnetic Field, 2015 Workshop on Chirality, Vorticity and Magnetic Field in Heavy Ion Collisions, UCLA, January 2015. **Invited talk**
- 2014
- Bottomonia in A-A, 2014 Sapore Gravis Workshop on Heavy flavour and quarkonium production in high-energy heavy-ion collisions, Padova, Italy, December 2014. **Invited talk**
  - Non-perturbative reorganization of viscous hydrodynamics, Fourth Joint Meeting of the Nuclear Physics Divisions of the American Physical Society and The Physical Society of Japan, Kona, Hawaii, October 2014. **Invited talk**
  - Bottomonium suppression in the QGP, Heavy Flavor and Electromagnetic Probes in Heavy Ion Collisions, Institute for Nuclear Theory, Seattle, WA, September 2014. **Invited talk**
  - Three loop HTL perturbation theory at finite temperature and chemical potential, Nuclear Physics Seminar, Argonne National Lab, September 2014.
  - Anisotropic Hydrodynamics (Three Lectures), Cracow School of Theoretical Physics, Zakopane, Poland, June 2014. **Invited Lectures (3)**
  - Three loop HTL perturbation theory at finite temperature and chemical potential(s), Bialasowka Seminar, IFJ PAN High-Energy and Nuclear Theory Institute, Krakow, Poland, June 2014.
  - Three loop HTL perturbation theory at finite temperature and chemical potential, Quark Matter 2014, Darmstadt, Germany, May 2014.
  - Anisotropic Hydrodynamics, Purdue University Nuclear Physics Seminar, April 2014.
  - Anisotropic Hydrodynamics, Ohio University Nuclear Physics Seminar, April 2014.
  - Anisotropic Hydrodynamics: Recent Progress, The Approach to Equilibrium in Strongly Interacting Matter, Brookhaven National Laboratory, April 2014. **Invited talk**
  - The chromo-Weibel instability in an expanding background, JET Bulking Working Group Meeting, April 2014.
  - Resummed QCD thermodynamics at finite temperature and chemical potential, JET Bulking Working Group Meeting, January 2014.
- 2013
- Second-Order Anisotropic Hydrodynamics, New Frontiers in QCD 2013, Yukawa Institute for Theoretical Physics, Kyoto, Japan, November 2013. **Invited talk**
  - Resummed QCD thermodynamics at finite temperature and chemical potential, New Frontiers in QCD 2013, Yukawa Institute for Theoretical Physics, Kyoto, Japan, November 2013. **Invited talk**
  - Anisotropic Hydrodynamics, International Conference on the Initial Stages in High-Energy Nuclear Collisions, Illa da Toxa, Spain, September 2013. **Invited talk**
  - Anisotropic Hydrodynamics (Three Lectures), JET Summer School, Ohio State University, June 2013. **Invited Lectures (3) Invited Lectures**
  - Three-loop resummed QCD Thermodynamics, APS Ohio Region Section Meeting, Athens, Ohio, March 2013.
  - Anisotropic Hydrodynamics, McGill University Nuclear/Particle Physics Seminar, Montreal, Canada, March 2013.
  - Anisotropic Hydrodynamics, Ohio State University Nuclear/Particle Physics Seminar, Columbus, Ohio, March 2013.k
  - Thermal Bottomonium Suppression, RIKEN/BNL Nuclear Theory Seminar, Brookhaven National Laboratory, February 2013.
- 2012
- The chromo-Weibel instability in an expanding background, International Symposium on Multiparticle Dynamics, Kielce, Poland, September 2012. **Invited talk**
  - Anisotropic Hydrodynamics, National Institute for Nuclear Theory Program “Gauge Field Dynamics In and Out of Equilibrium,” Seattle, Washington, March 2012. **Invited talk**

## Seminars (since 2001) (continued)

- Quantum Chromodynamics at Five Trillion Degrees Kelvin, Kent State University Physics Department, March 2012.
- Quantum Chromodynamics at Five Trillion Degrees Kelvin, Universidade Federal de Santa Catarina, Florianopolis, Brazil, April 2012.
- Anisotropic Hydrodynamics, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, April 2012.
- Thermal Bottomonium Suppression, Hadrons XII, Bento Gonsalves, RS, Brazil, April 2012.
- Anisotropic Hydrodynamics, Instituto de Fisica da Universidade de Sao Paulo, São Paulo, Brazil, May 2012.
- Anisotropic Hydrodynamics, Triangle Nuclear Theory Colloquium, Duke University, Durham, NC, May 2012.
- Highly Anisotropic Dissipative Hydrodynamics, Eleventh Conference on the Intersections of Particle and Nuclear Physics, St. Petersburg, FL, June 2012. **Invited talk**
- Anisotropic Hydrodynamics, Institute of Theoretical Physics, CEA-Saclay, Gif-sur-Yvette Cedex, France, July 2012.
- Anisotropic Hydrodynamics, Strong and Electroweak Matter 2012, Swansea, Wales, July 2012.
- NNLO hard-thermal-loop thermodynamics for QCD, Department of Theoretical Physics, University of Montpellier II, Montpellier, France, July 2012.
- Upsilon Suppression at RHIC and LHC, Institute for Theoretical Physics, Heidelberg University, Heidelberg, Germany, July 2012.
- The chromo-Weibel instability in an expanding background, Universidade de Santiago de Compostela, Santiago de Compostela, Galicia, Spain, July 2012.
- Thermal Bottomonium Suppression, Extreme QCD, George Washington University, Washington, DC, August 2012. **Invited talk**
- The chromo-Weibel instability in an expanding background, International Symposium on Multiparticle Dynamics, Kielce, Poland, September 2012. **Invited talk**
- Thermal Bottomonium Suppression, 5th International Workshop on Heavy Quark Production in Heavy-Ion Collisions, University of Utrecht, Utrecht, The Netherlands, November 2012. **Invited talk**
- Anisotropic Hydrodynamics, JET Collaboration Online Seminar, December 2012. **Invited talk**
- 2011 • Quark Gluon Plasma Dynamics, Los Alamos National Lab, Theoretical Physics Group Seminar, March 2011.
- Dynamics of an Anisotropic Plasma, Texas A&M University, Nuclear Theory Group Seminar, April 2011.
- Theory of the Quark Gluon Plasma, APS Meeting : APS Topical Group on Hadronic Physics, Anaheim, California, April 2011. **Invited talk**
- Upsilon Suppression at RHIC and LHC, BNL Summer Program: Quarkonium Production in Elementary and Heavy Ion Collisions, Brookhaven National Laboratory, June 2011. **Invited talk**
- Thermal  $\Upsilon(1s)$  and  $\chi_{b1}$  suppression in  $\sqrt{s_{NN}} = 2.76$  TeV Pb-Pb, IFJ PAN High-Energy and Nuclear Theory Institute, Krakow, Poland, July 2011.
- Thermal  $\Upsilon(1s)$  and  $\chi_{b1}$  suppression in  $\sqrt{s_{NN}} = 2.76$  TeV Pb-Pb, Universidade de Santiago de Compostela, Santiago de Compostela, Galicia, Spain, July 2011.
- Thermal  $\Upsilon(1s)$  and  $\chi_{b1}$  suppression in  $\sqrt{s_{NN}} = 2.76$  TeV Pb-Pb, Institute for Theoretical Physics, Johann Wolfgang Goethe University, Frankfurt am Main, July 2011.
- Thermal  $\Upsilon(1s)$  and  $\chi_{b1}$  suppression in  $\sqrt{s_{NN}} = 2.76$  TeV Pb-Pb, Institute for Theoretical Physics, Vienna University of Technology, Vienna, August 2011.
- Quantum Chromodynamics at Five Trillion Degrees Kelvin, Gettysburg College Physics Department, November 2011.
- Thermal Bottomonium Suppression, McGill University, High Energy Theory Seminar, November 2011.
- Is early isotropization in heavy ion collisions a necessary condition to describe HIC data?, EMMI Rapid Reaction Task Force on Thermalization in Nonabelian Plasmas, Heidelberg University, Heidelberg, December 2011. **Invited talk**
- 2010 • Reorganizing the QCD pressure at intermediate coupling, Norwegian Winter Workshop on QCD at Extreme Conditions, Trondheim, Norway, February 2010. **Invited talk**

## Seminars (since 2001) (continued)

- Three loop hard thermal loop perturbation theory, Extreme QCD 2010, Bad Honnef, Germany, June 2010. **Invited talk**
- A new class of boost invariant solutions, Institute for Theoretical Physics, Johann Wolfgang Goethe Universität, Frankfurt am Main, Germany, June 2010.
- NNLO hard thermal loop thermodynamics, High Energy Strong Interactions, Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan, August 2010. **Invited talk**
- A three-loop HTLpt-improved calculation of QCD thermodynamics, The first heavy ion collisions at the LHC - HIC10, European Organization for Nuclear Research (CERN), Geneva, Switzerland, August 2010. **Invited talk**
- The chromo-Weibel Instability, Hot Matter: Quasiparticles or Quasinormal Modes, International Erwin Schrodinger Institute for Mathematical Physics, Vienna, Austria, August 2010. **Invited talk**
- Dissipative Dynamics of Highly Anisotropic Systems, Brookhaven National Lab, Nuclear Physics Seminar, October 2010.
- 2009 • Dynamics of Turbulent Color Fields, Extreme Scale Computing Workshop Series, Forefront Questions in Nuclear Science and the Role of High Performance Computing, January 2009. **Invited talk**
- A Parallel Algorithm for Solving the 3d Schrödinger Equation, Frankfurt Institute for Advanced Studies, June 2009.
- Three-loop HTL Free Energy for QED, Three Days of Strong Interactions, Wroclaw, Poland, July 2009.
- The Phenomenology of non-Abelian Plasma Instabilities, Vienna University of Technology, Vienna, Austria, August 2009.
- Reorganizing the QCD pressure at intermediate coupling, University of Virginia, Charlottesville, VA, October 2009.
- Reorganizing the QCD pressure at intermediate coupling, Ohio State University, Columbus, OH, November 2009.
- 2008 • Non-abelian plasma instabilities, Kavli Institute for Theoretical Physics, Santa Barbara, CA, January 2008. **Invited talk**
- Using electromagnetic observables to determine QGP thermalization time, Kavli Institute for Theoretical Physics, Santa Barbara, CA, February 2008. **Invited talk**
- Measuring QGP thermalization time with dileptons, Lawrence Berkeley National Labs, Berkeley, CA, February 2008.
- QCD at Extreme Conditions, Gettysburg College, Gettysburg, PA, February 2008.
- Measuring QGP thermalization time with dileptons, Kavli Institute for Theoretical Physics, Santa Barbara, CA, February 2008. **Invited talk**
- QCD at Extreme Conditions, Lehmann College, New York, NY, March 2008.
- Non-abelian plasma instabilities, The City University of New York, New York, NY, March 2008.
- Measuring QGP thermalization time with high-energy dileptons, Hard Probes 08, Galicia-Illa Toxa, June 2008.
- Instabilities of an anisotropically expanding non-Abelian plasma: 1D+3V discretized hard-loop simulations, Yukawa Institute for Theoretical Physics, Kyoto, Japan, August 2008. **Invited talk**
- Instabilities of an anisotropically expanding non-Abelian plasma: 1D+3V discretized hard-loop simulations, McGill University, September 2008.
- Measuring QGP thermalization time with high-energy dileptons, Relativistic Aspects of Nuclear Physics, Rio de Janeiro, Brazil, November 2008. **Invited talk**
- Instabilities of an anisotropically expanding non-Abelian plasma, Instituto de Física Teórica, São Paulo, Brazil, November 2008.
- 2007 • Simulating Nonequilibrium Glue, High energy QCD, ECT\*, Trento, Italy, January 2007. **Invited talk**
- Non-equilibrium plasmas: Dynamics and Signatures, Latest Results On QGP Collective Properties, Frankfurt, Germany, February 2007. **Invited talk**
- Calculating observables from a non-equilibrium plasma, High Density QCD, Galileo Galilei Institute for Theoretical Physics, Florence, Italy, February 2007. **Invited talk**
- Numerical Simulations of Non-Equilibrium Plasmas, Laboratoire de Physique Théorique, Université de Paris, Paris, March 2007. **Invited Lecture Series**
- Signatures of plasma instabilities and anisotropies, Heavy Ion Perspectives, Bad Liebenzell, Germany, September 2007. **Invited talk**



## Seminars (since 2001) (continued)

- QGP collective effects on jet transport, American Physical Society Division of Nuclear Physics Annual Meeting, Newport News, VA USA, October 2007. **Invited talk**
- QGP collective effects on jet transport, Instituto de Ciencias del Espacio, Fac. de Ciencias, Barcelona, Spain, November 2007.
- Collective effects in a non-equilibrium QGP, Baruch, College, New York, NY, December 2007.
- 2006
- Non-abelian plasma instabilities, Brookhaven National Labs, Upton, NY, January 2006.
- Non-abelian plasma instabilities, NC State University, Raleigh, NC, January 2006.
- Non-abelian plasma instabilities, Stony Brook University, Stony Brook, NY, January 2006.
- Non-abelian plasma instabilities, Columbia University, New York, NY, January 2006.
- Non-abelian plasma instabilities, Strong and Electroweak Matter 2006, BNL, New York, NY, May 2006. **Invited talk**
- Non-abelian plasma instabilities, Fifth International Conference on PERSPECTIVES IN HADRONIC PHYSICS Particle-Nucleus and Nucleus-Nucleus Scattering at Relativistic Energies, ICTP, Trieste, Italy, May 2006. **Invited talk**
- QCD Plasma Instabilities and the Onset of Thermalization of a QGP, Heavy Ion Reactions at Ultrarelativistic Energies, ECT\*, Trento, Italy, June 2006.
- Non-abelian plasma instabilities, XXXVI International Symposium on Multiparticle Dynamics, Paraty, Brazil, September 2006. **Plenary talk**
- Simulating non-equilibrium glue, Rio de Janeiro Federal University, Rio de Janeiro Brazil, September 2006.
- Simulating non-equilibrium glue, INT Workshop on Non-equilibrium quark-gluon plasma, Seattle, Washington, September 2006. **Invited talk**
- Simulating non-equilibrium glue, Relativistic Nuclear Matter Workshop, GSI, Darmstadt, Germany, November 2006. **Invited talk**
- Non-equilibrium quark-gluon plasma, STAR Collaboration Meeting, Hefei, China, November 2006. **Invited talk**
- Thermalization via Instabilities, Quark Matter 2006, Shanghai, China, November 2006. **Plenary talk**
- 2005
- Instability-driven thermalization of a QGP, University of Helsinki, January 2005.
- Instability-driven thermalization of a QGP, NORDITA, Copenhagen, January 2005.
- Probing the early universe using relativistic heavy ion collisions, NORDITA, Copenhagen, January 2005. **Colloquium**
- Hard-loop dynamics of non-abelian plasma instabilities, Johann Wolfgang Goethe-Universität, Frankfurt am Main, June 2005.
- Dynamics of quark-gluon plasma instabilities in discretized hard-loop approximation, Quark Matter Meeting, Budapest, Hungary, August 2005.
- Hard-loop dynamics of non-abelian plasma instabilities, Vienna QGP Thermalization Workshop, Vienna, Austria, August 2005. **Invited talk**
- Dynamics of quark-gluon plasma instabilities in discretized hard-loop approximation, Jyväskylä University, Jyväskylä, Finland, October 2005.
- 2004
- QGP Instabilities: A faster way to thermalize?, University of Virginia, Charlottesville, VA, USA, January 2004.
- Collective Modes of an Anisotropic QGP, Ohio State University, Columbus, OH, USA, January 2004.
- QGP Instabilities: A faster way to thermalize?, NORDITA, Copenhagen, Denmark, March 2004.
- Collective Modes of an Anisotropic QGP, Helsinki University, Strong and Electroweak Matter Meeting, Helsinki, June 2004.
- QGP Instabilities: A faster way to thermalize?, Institut für Theoretische Physik, Johann Wolfgang Goethe-Universität, July 2004.
- Instability driven thermalization of a Quark Gluon Plasma, CERN Theory Division, Invited Seminar, Oct 2004.
- Improving the convergence of finite temperature field theory, University of Helsinki, November 2004.
- 2003
- Collective modes of an anisotropic QGP, Brookhaven National Lab, New York, NY, March 2003.
- Collective modes of an anisotropic QGP, University of Helsinki, Helsinki, Finland, June 2003.
- Energy loss and collective modes of an anisotropic QGP, University of Bielefeld, Bielefeld, Germany, November 2003

## Seminars (since 2001) (continued)

- Energy loss and collective modes of an anisotropic QGP, Polish Institute for Theoretical Physics, Warsaw, Poland, November 2003
- 2002 • XML and the Apache Cocoon Project, **Invited talk**, American Association of Physics Teachers Meeting, Philadelphia, PA, January 2002.
- Two-loop hard thermal loop perturbation theory, KITP Conference on QCD and Gauge Theory Dynamics in the RHIC Era, Institute of Theoretical Physics, University of California, Santa Barbara, CA, May 2002. **Invited talk**.
- Hard thermal loop resummation of the equation of state for Hot QCD, Jyvaskyla University, Jyvaskyla, Finland, June 2002.
- Resumming the resummation, Duke University, September 2002.
- The equation of state for ultra-dense stellar objects, Vienna Technical University, Vienna, Austria, July 2002.
- Reorganizing finite temperature QCD perturbation theory, Vienna Technical University, Vienna, Austria, November 2002.
- Two-loop hard thermal loop perturbation theory, Brookhaven National Lab, New York, NY, December 2002.
- 2001 • Quasiparticle Excitations in Finite-Temperature QCD, University of Utrecht, Utrecht, The Netherlands, April 2001.
- Open Source Software Development Paradigms for Educational Software Development, American Association of Physics Teachers Meeting, Rochester, NY, July 2001.
- Variational Perturbation Theory, Duke University, Durham, NC, September 2001.

## Conference/Institute Organization

- 2022 • International Advisory Committee, 8th International Workshop on Heavy Flavour Production in Nuclear Collisions, Torino, July 14-16, 2022.
- International Advisory Committee, Extreme QCD (XQCD), Trondheim, Norway, June 24-29, 2019
- International Advisory Committee, Quark Matter 2022, Krakow, Poland, April 2022.
- 2021 • Organizing Committee, Group on Hadron Physics Workshop, APS Topical Unit, April 13-16, 2021
- 2019 • EMMI Rapid Reaction Task Force (RRTF), Suppression and (re)generation of quarkonium in heavy-ion collisions at the LHC, GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany, December 16-20, 2019.
- International Advisory Committee, Initial Stages 2019, New York, NY USA, June 24-28, 2019.
- International Advisory Committee, Extreme QCD (XQCD), Tokyo, Japan, June 24-29, 2019.
- 2017 • Local Organizing Committee, Quark Matter XXVI, Chicago, IL USA, February 5-11, 2017.
- International Advisory Committee, Extreme QCD (XQCD), University of Pisa, Italy, June 26-28, 2017.
- 2016 • International Advisory Committee, Extreme QCD (XQCD), Plymouth, UK August 1-3, 2016.
- 2015 • Co-organizer, Ohio Regional Section - Spring Meeting of the American Physical Society, Kent State University, Kent, OH, March 27-28, 2014.
- 2014 • Co-organizer, XXVII Midwest Theory Get-Together, Argonne National Lab, Lemont, IL September 5-6, 2014.
- 2014 • Co-organizer, Midwest Critical Mass, University of Toledo, Toledo, OH, March 7-8, 2014.
- 2007 • Co-organizer, Early Time Dynamics in Heavy Ion Collisions, McGill University, Montreal, Canada, July 16-19, 2007.