

Research output list

If not specifically indicated otherwise, the following research list is in alphabetical order. In all subsequent research output, I contributed at the level of first or second author, conducted the computations, (co-)led the writing, and developed the main ideas of the project.

Journal articles

- [26] M. Lewicki, M. Merchand, L. Sagunski, **P. Schicho**, and D. Schmitt, *Impact of theoretical uncertainties on model parameter reconstruction from GW signals sourced by cosmological phase transitions*, (2024), [2403.03769].
- [25] J. Ghiglieri, **P. Schicho**, N. Schlusser, and E. Weitz, *The force-force correlator at the hard thermal scale of hot QCD*, (2023), [2312.11731].
- [24] C. Lwowski, K. Kaiser, J. Bucur, **P. Schicho**, and T. Kohnen, *Accuracy of using the axial length of the fellow eye for IOL calculation in retinal detachment eyes undergoing silicone oil removal*, Br. J. Ophthalmology (2023) 10.1136/bjo-2023-323581.
- [23] J. Österman, **P. Schicho**, and A. Vuorinen, *Integrating by parts at finite density*, JHEP **08**, 212 (2023), [2304.05427].
- [22] L. Sagunski, **P. Schicho**, and D. Schmitt, *Supercool exit: Gravitational waves from QCD-triggered conformal symmetry breaking*, Phys. Rev. D **107**, 123512 (2023), [2303.02450].
- [21] A. Ekstedt, **P. Schicho**, and T. V. I. Tenkanen, *DRalgo: A package for effective field theory approach for thermal phase transitions*, Comput. Phys. Commun. **288**, 108725 (2023), [2205.08815].
- [20] T. Gorda, A. Kurkela, J. Österman, R. Paatelainen, S. Säppi, **P. Schicho**, K. Seppänen, and A. Vuorinen, *Degenerate fermionic matter at N³LO: Quantum electrodynamics*, Phys. Rev. D **107**, L031501 (2023), [2204.11893].
- [19] T. Gorda, A. Kurkela, J. Österman, R. Paatelainen, S. Säppi, **P. Schicho**, K. Seppänen, and A. Vuorinen, *Soft photon propagation in a hot and dense medium to next-to-leading order*, Phys. Rev. D **107**, 036012 (2023), [2204.11279].
- [18] J. Löfgren, M. J. Ramsey-Musolf, **P. Schicho**, and T. V. I. Tenkanen, *Nucleation at Finite Temperature: A Gauge-Invariant Perturbative Framework*, Phys. Rev. Lett. **130**, 251801 (2023), [2112.05472].
- [17] **P. Schicho**, T. V. I. Tenkanen, and G. White, *Combining thermal resummation and gauge invariance for electroweak phase transition*, JHEP **11**, 047 (2022), [2203.04284].
- [16] S. Biondini, **P. Schicho**, and T. V. I. Tenkanen, *Strong electroweak phase transition in t-channel simplified dark matter models*, JCAP **10**, 044 (2022), [2207.12207].

- [5] M. A. Fraser, R. G. Alia, B. Balhan, H. Bartosik, C. Bertone, D. Björkman, J. Borburgh, N. Conan, K. Cornelis, L. Gatignon, B. Goddard, Y. Kadi, V. Kain, A. Mereghetti, F. Roncarolo, **P. M. Schicho**, J. Spanggaard, O. Stein, L. Stoel, F. M. Velotti, and H. Vincke. *SPS Slow Extraction Losses and Activation: Challenges and Possibilities for Improvement*. In *Proc. of International Particle Accelerator Conference (IPAC'17)* (Copenhagen. 2017), 611–614.

Theses

- [4] **P. M. Schicho**, *Multi-loop investigations of strong interactions at high temperatures*, PhD thesis (U. Bern, 2020).
- [3] **P. M. Schicho**, *Inhomogeneous condensation in quark-based QCD effective models via wavelet pseudoparticles*, MA thesis (ETH Zürich, 2016).
- [2] **P. Schicho**, *π - and ρ -Meson mass spectroscopy from Lattice QCD*, BA thesis (TU Graz, 2014).
- [1] **P. Schicho**, *Increasing the sensitivity of a search for supersymmetry in the single lepton channel with the Stransverse Mass*, Project thesis (HEPHY Vienna, 2014).

Invited talks at workshops

- 19/03/2024 *Strong cosmological phase transitions through the EFT lens*, invited **planary** talk at *Quarkonia meet Dark Matter* at Institute for Advanced Study, Technical University of Munich, Germany
- 05/12/2022 *EFT framework for (precision) cosmological phase transition thermodynamics*, invited **planary** talk at *What the heck happens when the Universe boils?* at Kavli IPMU, Tokyo, Japan

Contributed talks

- 14/09/2023 *Phase transition thermodynamic parameters at high precision*, contributed talk at 26th International Conference on Particle Physics and Cosmology (COSMO'23), Madrid, Spain
- 11/07/2023 *Degenerate fermionic matter at N^3LO* , contributed talk at ELEMENTS Annual Conference, Bad Nauheim, Germany
- 03/07/2023 *Can EFT reveal if there was an electroweak phase transition?*, contributed talk at Cosmology from Home
- 22/06/2023 PRECLISA. *Gravitational waves from cosmological phase transitions: Precision cosmology in the light of LISA*, interview talk for the Ambizione grant of the Swiss National Science Foundation, Bern, Switzerland

- 17/05/2023 *Phase transition thermodynamic parameters at high precision*, contributed talk at How fast does the bubble grow?, DESY, Hamburg, Germany
- 05/05/2023 *Strong electroweak phase transition and simplified dark matter models*, contributed talk at Progress on Old and New Themes in cosmology (PONT) 2023, Avignon, France
- 20/06/2022 *Jet dispersion in hot QCD from the lattice*, contributed talk at SEWM 2022, Paris, France
- 06/04/2022 *(Non-)perturbative jet dispersion hot QCD*, contributed talk at Quark Matter 2022, Kraków, Poland
- 30/03/2022 *(Non-)perturbative jet dispersion hot QCD*, contributed talk at Mini workshop: Phase transitions in particle physics, Galileo Galilei Institute, Firenze, Italy
- 29/03/2021 *Soft thermal contributions to 3-loop gauge coupling*, contributed parallel talk at Fun-QCD (online), Barcelona, Spain
- 28/06/2018 *Fun with thermal dimension-six operators*, contributed parallel talk at SEWM 2018, Barcelona, Spain

Seminar talks

- 23/11/2023 *Impact of computational diligence on GW signals from phase transitions*, invited seminar talk at Warsaw University, Poland
- 12/10/2023 *Impact of computational diligence on GW signals from phase transitions*, invited seminar talk at University of Basel, Basel, Switzerland
- 19/09/2023 *Impact of computational diligence on GW signals from phase transitions*, invited seminar talk at Helsinki Institute of Physics, Helsinki, Finland
- 15/06/2023 *Electroweak phase diagram at finite lepton number density*, contributed talk at Thermal Field Theory meets Phenomenology, Uppsala, Sweden
- 30/05/2023 *High-temperature effective field theories: Precision phase transition thermodynamics*, seminar talk at HEP seminar, Université de Genève, Switzerland
- 10/05/2023 *Integrating by parts at finite density*, informal talk at the DMGW meeting, Goethe University, Frankfurt, Germany
- 25/01/2023 *Degenerate fermionic matter at N^3LO* , invited seminar talk at Gravitation and Cosmology seminar, Utrecht University, Netherlands
- 24/01/2023 *What can EFT tell us about the electroweak phase transition?*, seminar talk at CRC-TR211 meeting and Colloquium, Bielefeld University, Germany
- 08/11/2022 *EFT framework for cosmological phase transition thermodynamics*, seminar talk at the AstroCoffee, Goethe University, Frankfurt, Germany

- 13/10/2022 *Degenerate fermionic matter at N^3LO* , invited seminar talk (online) at S@INT seminar, INT, Seattle, USA
- 15/09/2022 *(Gauge independent) Bubble nucleation rate at finite temperature*, invited seminar talk at Jožef Stefan Institute, Ljubljana, Slovenia
- 24/08/2022 *Can EFT tell us if there was an electroweak phase transition?*, invited seminar talk at University of Graz, Graz, Austria
- 11/07/2022 *Soft light-cone observables from electrostatic QCD*, invited seminar talk (online) at the QCD theory seminar
- 07/07/2022 *Degenerate fermionic matter at N^3LO* , invited seminar talk at the Nuclear Physics Colloquium, Goethe University, Frankfurt, Germany
- 16/06/2022 *Can EFT tell us if there was an electroweak phase transition?*, invited seminar talk at SUBATECH, Nantes, France
- 31/05/2022 *Electroweak phase transition: Combining thermal resummation and gauge invariance*, invited seminar talk at NICPB, Tallinn University, Estonia
- 24/05/2022 *Combining thermal resummation and gauge invariance for electroweak phase transition*, invited seminar talk (online) at School of Physics and Astronomy, Monash University, Australia
- 03/03/2022 *Effective theory approach to cosmological phase transitions*, invited seminar talk at Instituto de Astrofísica de Canarias, La Laguna, Spain
- 28/10/2021 *Gauge independent bubble nucleation rate at finite temperature*, invited seminar talk at University of Basel, Basel, Switzerland
- 19/10/2021 *Cosmological phase transition: Robust thermal resummation*, invited seminar talk at University of Bern, Bern, Switzerland
- 13/05/2021 *Cosmological phase transition: Robust thermal resummation*, invited seminar talk (online) at KIAS, Seoul, South Korea
- 25/11/2020 *How to be precise at the electroweak scale at finite-temperature*, invited seminar talk (online) at Kavli IPMU, Tokyo, Japan
- 13/08/2019 *3-Loop Gauge Coupling in Hot Yang-Mills*, invited seminar talk at Helsinki Institute of Physics, Helsinki, Finland
- 28/08/2018 *Fun with thermal dimension-six operators*, invited seminar talk at Universidad del Bío-Bío, Chillán, Chile