

Georgios Koutentakis

Curriculum Vitae

☎ +49 176 23252736

✉ georgios.koutentakis@ist.ac.at

Born on 13-05-1992 (Heraklion, Greece)

Marital Status: single

University Education

- 2015–2021 **PhD. in Theoretical Physics**, *Zentrum für Optische Quantentechnologien, University of Hamburg, Germany*, **Degree: 1.0** (*summa cum laude*).
Title of PhD Thesis: “Probing the Correlated Spin-dynamics of Ultracold Atoms: Magnetic and Polaronic Properties”, Supervisor: Prof. Dr. P. Schmelcher
- 2014–2016 **Master’s degree in Advanced Physics, section of High-Energy Physics and Cosmology**, *University of Crete, Greece*, **Degree: 8.07/10.0**.
Master’s Thesis: “Renormalization Group Flows in Non-Relativistic Holographic Effective Field Theories”, Supervisor: Prof. Dr. E. Kiritsis
- 2010–2014 **Ptychion degree in Physics**, *University of Crete, Greece*, **Degree: 9.36/10.0**.
Thesis: “Hořava Lifshitz Gravity and Non-Relativistic Holography”, Supervisor: Prof. Dr. E. Kiritsis

Awards and Fellowships

- 2022 IST-BRIDGE postdoctoral fellowship.
- 2014 “Manasaki” bequest scholarship for being the student with the best marks for the academic years 2012-2013.
- 2012-2013 Scholarships by the State Scholarships Foundation (I.K.Y.) for being among the two students with the best marks for the academic years 2010-2011, 2011-2012.
- 2011 “Karidi” bequest scholarship for high marks in the Panhellenic exams of 2010.

Experience

Research

- 01.04.2022–present **IST-BRIDGE postdoctoral fellow**, *Institute of Science and Technology Austria (ISTA)*, Austria, Host group: Prof. Dr. Leshko.
- 17.09.2021–31.03.2022 **Postdoctoral researcher in Atomic Molecular and Optical Physics**, *Zentrum für Optische Quantentechnologien, University of Hamburg, Germany*, Host group: Prof. Dr. Schmelcher.
- 01.07.2015–16.09.2021 **PhD candidate in Atomic Molecular and Optical Physics**, *Zentrum für Optische Quantentechnologien, University of Hamburg, Germany*, Scientific supervisor: Prof. Dr. Schmelcher.

Teaching

- 2015–2021 **Teaching Assistant**, *University of Hamburg, Hamburg, Germany*.
Subjects taught:
- Theoretische Physik I: Klassische Feldtheorie (Theoretical Physics I: Classical field theory).
 - Theoretische Physik II: Quantenmechanik I (Theoretical Physics II: Quantum Mechanics I).
 - Quantenmechanik II (Quantum Mechanics II).

Languages

Greek native
English fluent, EDEXCEL Lower (PTE level 3)

Computer skills

Operating Systems Linux
Programming Languages FORTRAN, C, C++, Python, AWK, emacs-lisp
Computation Software MATLAB, Mathematica
Typesetting Software \LaTeX , Office suites

Professional Affiliations

2015-present Member of the German Physical Society
2018-present Member of the American Physical Society

Selected Presentations in Conferences and Workshops

- 2021 **Annual meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP)**, “*Ferromagnetism and Phase-Separation in Confined Fermionic 1D Systems*”, poster, online, USA.
- 2019 **Annual meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP)**, “*Repulsive Fermi Polarons and Their Induced Interactions in Binary Mixtures of Ultracold Atoms*”, poster, Milwaukee, USA.
- 2019 **Annual meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP)**, “*Probing Ferromagnetic Order in Few-Fermion Correlated Spin-Flip Dynamics*”, talk, Milwaukee, USA.
- 2019 **Workshop on Compound (atomic) quantum systems**, “*Repulsive Bose and Fermi Polarons and Their Induced Interactions in Binary Mixtures of Ultracold Atoms*”, poster, Leiden, Netherlands.
- 2018 **Annual meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP)**, “*Many-Body Dissipative Flow of a Confined Scalar Bose-Einstein Condensate Driven by a Gaussian Impurity*”, poster, Fort Lauderdale, USA.
- 2018 **Annual meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP)**, “*Probing Ferromagnetic Order in Few-Fermion Correlated Spin-Flip Dynamics*”, poster, Fort Lauderdale, USA.
- 2017 **DPG Frühjahrstagung (SAMOP)**, “*Dark-Bright Soliton Dynamics Beyond the Mean-Field Approximation*”, poster, Mainz, Germany.
- 2017 **DPG Frühjahrstagung (SAMOP)**, “*Quench-induced resonant mechanisms of bosons in an optical lattice with harmonic confinement*”, poster, Mainz, Germany.
- 2016 **CUI workshop: From few-to many-body physics in cold atomic quantum matter**, “*Regions of tunneling dynamics for few bosons in an optical lattice subjected to a quench of the imposed harmonic trap*”, poster, Hamburg, Germany.
- 2016 **DPG Frühjahrstagung (SAMOP)**, “*Regions of tunneling dynamics for few bosons in an optical lattice subjected to a quench of the imposed harmonic trap*”, poster, Hanover, Germany.

Conferences and Workshops organized

- 2020 **CUI Young Researchers Workshop 2020**, “Frontiers in nonequilibrium dynamics of multicomponent systems in the few- to many-body crossover”, Hamburg, Germany.

Publications

Published in Peer-Reviewed Journals

- 2022 G. M. Koutentakis, S. I. Mistakidis, and P. Schmelcher, “Pattern formation in one-dimensional polaron systems and temporal orthogonality catastrophe”, *Atoms* **10** 3.
- 2021 S.I. Mistakidis, G.M. Koutentakis, F. Grusdt, H. R. Sadeghpour, and P. Schmelcher, “Radiofrequency spectroscopy of one-dimensional trapped Bose polarons: crossover from the adiabatic to the diabatic regime”, *New J. Phys.* **23** 043051.
- 2020 S.I. Mistakidis, G.C. Katsimiga, G.M. Koutentakis, Th. Busch, and P. Schmelcher, “Pump Probe Spectroscopy of Ultracold Polarons: Dynamical Formation and Coherence Properties”, *Phys. Rev. Res.* **2**, 033380.
- 2020 G. M. Koutentakis, S. I. Mistakidis, and P. Schmelcher, “Interplay of phase separation and itinerant magnetism for correlated few fermions in a double-well”, *New J. Phys.* **22** 063058
- 2020 S. I. Mistakidis, G.M. Koutentakis, G.C. Katsimiga, Th. Busch, and P. Schmelcher, “Many-body quantum dynamics and induced correlations of Bose polarons”, *New J. Phys.* **22** 043007
- 2019 S. I. Mistakidis, F. Grusdt, G. M. Koutentakis, and P. Schmelcher, “Dissipative correlated dynamics of a moving impurity immersed in a Bose-Einstein Condensate”, *New J. Phys.* **21**, 103026
- 2019 S. I. Mistakidis, G. C. Katsimiga, G. M. Koutentakis, Th. Busch, and P. Schmelcher, “Quench Dynamics and Orthogonality Catastrophe of Bose Polarons”, *Phys. Rev. Lett.* **122**, 183001.
- 2019 G. M. Koutentakis, S. I. Mistakidis, and P. Schmelcher, “Probing Ferromagnetic Order in Few-Fermion Correlated Spin-Flip Dynamics”, *New J. Phys.* **21**, 053005.
- 2019 S. I. Mistakidis, G. C. Katsimiga, G. M. Koutentakis, and P. Schmelcher, “Repulsive Fermi Polarons and Their Induced Interactions in Binary Mixtures of Ultracold Atoms”, *New J. Phys.* **21** 043032.
- 2018 G. C. Katsimiga, S. I. Mistakidis, G. M. Koutentakis, P. G. Kevrekidis, and P. Schmelcher, “Many-body dissipative flow of a confined scalar Bose-Einstein condensate driven by a Gaussian impurity”, *Phys. Rev. A* **98**, 013632.
- 2018 S. I. Mistakidis, G. M. Koutentakis, and P. Schmelcher, “Bosonic quantum dynamics following a linear interaction quench in finite optical lattices of unit filling”, *Chem. Phys.* **509** 106.
- 2017 G. C. Katsimiga, S. I. Mistakidis, G. M. Koutentakis, P. G. Kevrekidis, and P. Schmelcher, “Many-body quantum dynamics in the decay of bent dark solitons of Bose-Einstein condensates”, *New J. Phys.* **19** 123012.
- 2017 L. Cao, V. Bolsinger, S. I. Mistakidis, G. M. Koutentakis, S. Krönke, J. M. Schurer, and P. Schmelcher, “A unified ab initio approach to the correlated quantum dynamics of ultracold fermionic and bosonic mixtures”, *J. Chem. Phys.* **147**, 044106.
- 2017 G. C. Katsimiga, G. M. Koutentakis, S. I. Mistakidis, P. G. Kevrekidis, and P. Schmelcher, “Dark-bright soliton dynamics beyond the mean-field approximation”, *New J. Phys.* **19** 073004.

2017 G. M. Koutentakis, S. I. Mistakidis, and P. Schmelcher, “*Quench-induced resonant tunneling mechanisms of bosons in an optical lattice with harmonic confinement*”, Phys. Rev. A **95**, 013617.

[Under Peer-Review](#)

2022 S. I. Mistakidis, G. M. Koutentakis, F. Grusdt, P. Schmelcher, and H. R. Sadeghpour, “*Inducing spin-order with an impurity: phase diagram of the magnetic Bose polaron*”, arXiv:**2110.11165**.

[Theses](#)

2019 G. M. Koutentakis, “*Renormalization Group Flows in Non-Relativistic Holographic Effective Field Theories*”, arXiv:**1902.09965**.