Georgios Palkanoglou

Current position

Postdoctoral Researcher
University of Jyväskylä, Jyväskylä, Finland

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Employment

2026- | Postdoctoral Researcher, University of Jyväskylä, Jyväskylä, Finland
2023-2026 | Postdoctoral Researcher, TRIUMF, Vancouver, Canada

Education

2019-2023 | PH.D. in Physics, University of Guelph | Dissertation: *Pairing in Nuclear and Cold Atomic Systems*
2018-2019 | M.SC. in Physics, University of Guelph | Thesis: *Approaching the Thermodynamic Limit in BCS Theory*
2013-2017 | B.SC. (HONOURS) in Physics, National and Kapodistrian University of Athens

Awards & Honours

2025-2026 | Catalonia Quantum Academy Visiting Scholar Award
2025 | Canadian Institute for Nuclear Physics support for workshop organization
2020 | Constantine and Patricia Mavroyannis Scholarship
2019-2020 | Dean's Graduate scholarship (University of Guelph)
2019 | International Doctoral Training Scholarship - Ph.D.'s (University of Guelph)

Conference organizing

2027 | (*Upcoming*) Lead organizer of the ECT* workshop "*Bridging Effective Field Theory Across Subatomic Scales*"
2025 | Lead organizer of the ESNT workshop **(with CINP support)** "*Ab initio many-body calculations: where has the pairing gone?*"
2025 | Lead organizer of the TRIUMF workshop "*SMEFT meets ChEFT*"
2025 | Co-organizer of the TRIUMF workshop "*PAINT26: Progress in Ab Initio Nuclear Theory*"

Spokesperson of Collaboration

2025 | S1936 at TRIUMF: *Beam Development of Light Lanthanides for Nuclear Structure Investigations Approaching* $N = Z$

Teaching experience

2026 | Instructor for "*Ab initio nuclear theory: a crash course*", University of Barcelona, Barcelona, Spain
2023 | Graduate Teaching Assistant in Physics of Music, Department of Physics, University of Guelph
2021 | Graduate Teaching Assistant in Quantum Mechanics, Department of Physics, University of Guelph
2020 | Graduate Teaching Assistant in (graduate) Quantum Field Theory, Department of Physics, University of Guelph
2019-2023 | Private Tutor in Undergraduate Physics
2018-2023 | Graduate Teaching Assistant in Applied Physics, Department of Physics, University of Guelph
2013-2017 | Private Tutor in Physics, Maths, and Geometry

Student co-Supervision

2026- Isaiah Bennet, M.Sc. student, University of Guelph | Project: *Emulators for Hartree-Fock-Bogoliubov methods*

2024–2025 Christos Tsekouras, Undergraduate thesis, National and Kapodistrian University of Athens | Project: *The quantum information in the scattering of nucleons*

2021–2022 Michael Stuck, Undergraduate Co-op student, University of Guelph | Project: *Spin triplet pairing in deformed heavy nuclei*

2022 Kareena Bhalla, Undergraduate Co-op student, University of Guelph | Project: *Non-linear regression for dilute gases of cold atoms*

Publications

Journal articles

2026 *Exploring the shell structure of trapped superfluids*
G. Palkanoglou, R. Curry, and S. Gandolfi
arXiv:2607.14214 [nucl-th]

2026 *Interplay between Nuclear Shell Structure and Pairing around Doubly Magic ^{132}Sn*
R. Simpson, G. Palkanoglou, E.C. Brisley, J.D. Cardona, A. Czihaly, S. Kakkar, M. Simonov, E. Taylor, C. Walls, P. Weligampola, C. Chambers, F. Maldonado Millan, A. Mollaebrahimi, D. Ray, A. Weaver, J. Yu, I. Dillmann, A. Gezerlis, G. Gwinner, A.O. Macchiavelli, S. Malbrunot-Ettenauer, M.P. Reiter, and A.A. Kwiatkowski
arXiv:2607.05647 [nucl-ex]

2026 *Evidence for Mutlimodal Superfluidity of Neutrons*
Y. Ma, G. Palkanoglou, J. Carlson, S. Gandolfi, A. Gezerlis, G. Given, A. Hicks, D. Lee, K.E. Schmidt, and J. Yu
arXiv:2602.17611 [nucl-th]

2025 *A novel way of recasting the Bardeen-Cooper-Schrieffer gap equations*
G. Palkanoglou and A. Gezerlis
Phys. Rev. C 114, 024340 (2026) | arXiv:2510.07384 [nucl-th]

2025 *Symmetry properties of pairing correlations in heavy deformed nuclei*
G. Palkanoglou and A. Gezerlis
arXiv:2505.08879 [nucl-th]

2024 *Spin-Triplet Pairing in Heavy Nuclei is Stable Against Deformation*
G. Palkanoglou, M. Stuck, and A. Gezerlis
Phys. Rev. Lett. 134, 032501 (2025) | arXiv:2402.13313 [nucl-th]

2022 *The $^1S_0$ pairing gap in neutron matter*
S. Gandolfi, G. Palkanoglou, J. Carlson, A. Gezerlis, and K. E. Schmidt
Condens. Matter **2022**, 7(1), 19 | arXiv:2201.01308 [nucl-th]
*Marked as a Feature Paper

2021 *Superfluid neutron matter with a twist*
G. Palkanoglou and A. Gezerlis
Universe **2021**, 7(2), 24 | arXiv:2012.04663 [nucl-th]
* Marked as a Feature Paper

2020 *From odd-even staggering to the pairing gap in neutron matter*
G. Palkanoglou, F. K. Diakonos, and A. Gezerlis
Phys. Rev. C **102**, 064324 (2020) | arXiv:2005.05985 [nucl-th]

Proceedings

2019 *Effective mass and pairing gap in neutron matter*
G. Palkanoglou, N. Ismail, M. Buraczynski, and A. Gezerlis
J. Phys.: Conf. Ser. 1643 012132 (2020).

Invited Talks & Seminars

2027 (Upcoming) *Many-nucleon correlations, many-nucleon forces, and ML methods for nuclear physics*
Colloquium, University of Guelph, , Guelph, Canada

2026 *Many-nucleon correlations, many-nucleon forces, and ML methods for nuclear physics*
Job Talk (virtual), Johannes Gutenberg University of Mainz , Mainz, Germany

2026 *Beyond the conventional nuclear superfluidity: triplet and mixed-spin superfluids across nucleonic systems, pairing at the drip-line, and more*
University of Barcelona, Barcelona, Spain

2026 *Revisiting superfluidity and shell-effects at the crossroads: experiments, mean-field, and ab initio descriptions*
UPC Universitat Politècnica de Catalunya, Barcelona, Spain

2026 *Nuclear superfluidity and clustering, many-nucleon forces, and ML methods for ab initio nuclear theory*
Job Talk (virtual), ECT*, Trento, Italy

2026 *Unconventional nuclear superfluidity: from the proton to the neutron drip-line, and beyond*
Job Talk (virtual), University of Jyväskylä, Jyväskylä, Finland

2026 (Co-organized) *Beyond the leading three-nucleon force in light nuclei*
PAINT26, Vancouver, BC, Canada

2025 (Organized) *Pinning the subleading three-nucleon contact interaction to light nuclei*
SMEFT meets ChEFT workshop, TRIUMF, Vancouver, BC, Canada

2025 (Organized) *Ab initio calculations of singlet and triplet pairing gaps in nucleonic matter*
Introductory lecture at Ab initio many-body calculations: "where has the pairing gone?", ESNT CEA, Saclay, Paris, France

2025 *How to describe isocscalar pairing in heavy deformed nuclei and measure its effects*
ACOT meeting, TRIUMF, Vancouver, BC, Canada

2025 *Putting the subleading three nucleon force to use*
PAINT25, TRIUMF, Vancouver, BC, Canada

2025 *S1936 Progress Report: Beam Development of Light Lanthanides for Nuclear Structure Investigations Approaching* $N = Z$
NP-EEC, TRIUMF, Vancouver, BC, Canada

2024 *Exotic pairing phases in nuclei and neutron matter*
T-2 Seminar, LANL, Los Alamos, NM, USA

2024 *Exotic nuclear superfluidity in heavy nuclei*
3rd APCTP-TRIUMF joint workshop, PKNU, Busan, South Korea

2024 *Nuclear superfluidity in nuclei and neutron matter*
National and Kapodistrian University of Athens, Athens, Greece

2024 *(Pathways to) Exotic pairing in heavy nuclei*
PAINT24 - Workshop on Progress In Ab Initio Nuclear Theory, TRIUMF, Vancouver, BC, Canada

2023 *Novel pairing and testing EFT interactions in neutron matter and nuclei*
Michigan State University

2023 *Mixed-spin pairing in nuclear and cold atomic systems*
Job Talk (virtual), Warsaw University of Technology

2023 *Mixed-spin pairing in nuclear and cold atomic systems*
Job Talk (virtual) TRIUMF Theory Group

2023 *Representing sound: Acoustics & Phonetics*
Lecture in Phonetics, School of Languages and Literature, University of Guelph, Guelph, ON, Canada

Contributed talks

2026 *Superfluid effects in deformed heavy nuclei close to the drip-lines*
Nuclear Theory in Spain I, Universidad Complutense de Madrid, Madrid, Spain

2024 *Exotic nuclear superfluidity in heavy nuclei*
2024 CeNAM Frontiers, University of Notre Dame, South Bend, IN, USA

2024 *Exotic nuclear superfluidity in heavy nuclei*
Theory Canada 16, Western University, London, ON, Canada

2024 *Exotic nuclear superfluidity in heavy nuclei*
CAP Congress 2024, Western University, London, ON, Canada

2023 *Singlet and triplet pairing in nuclear and cold atomic systems*
2023 Canadian Association of Physicists Congress
University of New Brunswick, Fredericton, NB, Canada

2023 *Singlet and triplet pairing in nuclear and cold atomic systems*
60th Winter Nuclear and Particle Physics Conference
Banff, AB, Canada

2023 *Mixed-spin pairing in nuclear and cold atomic systems*
Toronto Ultracold Atom Network (TUCAN) meeting
University of Toronto, Toronto, ON, Canada

2022 *The S-wave pairing gap in neutron matter*
2022 Canadian Association of Physicists Congress
*Marked as the 3rd best presentation in the Division of Theoretical Physics (DTP)

2021 *Superfluid neutrons: from particles to matter*
2021 Canadian Association of Physicists (Virtual) Congress
*Tied as the 2nd best presentation in the Division of Theoretical Physics (DTP)

2021 *Superfluid neutron matter with a twist*
58th Winter Nuclear and Particle Physics (Virtual) Conference
* Marked as the 2nd best presentation in Theoretical Physics

2021 *Superfluid neutron matter with a twist*
Seminar (virtual), Graduate Seminar Series, University of Guelph, Guelph, ON, Canada

2020 *From odd-even staggering to the pairing gap in neutron matter*
2020 Canadian Association of Physicists (Virtual) Congress

2020 *From odd-even staggering to the pairing gap in neutron matter*
57th Winter Nuclear and Particle Physics Conference
Banff, AB, Canada

2018 *A Superconducting Star*
Seminar (virtual), Graduate Seminar Series, University of Guelph, Guelph, ON, Canada

Conferences & Summer schools attended

2026 ML2026 - II Machine Learning Methods for Complex and Quantum Systems, University of Barcelona, Barcelona, Spain
2026 NT.ES I - Nuclear Theory in Spain, Universidad Complutense de Madrid, Madrid, Spain
2026 CSQCD - Compact Stars in the QCD phase diagram, University of Barcelona, Barcelona, Spain
2026 PAINT26 - Workshop on Progress In Ab Initio Nuclear Theory, TRIUMF, Vancouver, British Columbia, Canada
2025 SMEFT meets ChEFT, TRIUMF, Vancouver, British Columbia, Canada
2025 Ab initio many-body calculations: where has the pairing gone, ESNT, Saclay, France
2025 PAINT25 - Workshop on Progress In Ab Initio Nuclear Theory, TRIUMF, Vancouver, British Columbia, Canada
2024 3rd APCTP-TRIUMF joint workshop: From Nuclei to Neutron Stars, PKNU, Busan, South Korea
2024 2024 CeNAM Frontiers, University of Notre Dame, South Bend, Indiana, USA
2024 2024 C.A.P Congress, Western University, London, Ontario, Canada
2024 Theory Canada 16, Western University, London, Ontario, Canada
2024 PAINT24 - Workshop on Progress In Ab Initio Nuclear Theory, TRIUMF, Vancouver, British Columbia, Canada
2023 2023 C.A.P Congress, University of New Brunswick, Fredericton, New Brunswick, Canada
2023 60th Winter Nuclear and Particle Physics (Virtual) Conference, Banff, AB, Canada
2022 2022 C.A.P Congress, McMaster University, Hamilton, Ontario, Canada
2021 2021 C.A.P (Virtual) Congress
2021 58th Winter Nuclear and Particle Physics (Virtual) Conference
2020 2020 C.A.P (Virtual) Congress
2020 57th Winter Nuclear and Particle Physics Conference, Banff, AB, Canada

2017 The 2017 Onassis Foundation Lectures in Physics: “Quantum physics frontiers explored with cold atoms, molecules and photons", Heraklion, Greece
2017 The 2017 Petnica Summer Institute summer school on Cosmology, Petnica, Serbia
2016 The 3rd Xmas Theoretical Physics Workshop, Athens, Greece

Computing skills

Languages

Fortran, Python, Bash, MATLAB, Mathematica, C++, HTML

Software

LaTeX, PLUTO, Logger Pro

Outreach & Service

2025 Volunteer mentor in the Early Career Researcher mentorship program, TRIUMF
2022 Research Information Session, University of Guelph
2021 Volunteer judge for the 57th Annual Canadian Undergraduate Physics Conference (CUPC)
2019 Volunteer for STEM Week 2019 organized by the University of Guelph, Guelph Civic Museum
2018 Volunteer for STEM Week 2018 organized by the University of Guelph, Guelph Civic Museum

Languages

Greek (native), English (fluent), Farsi (beginner), Spanish (beginner)

Last updated: November 19, 2026