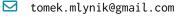
Tomasz Partryk Młynik

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Education

2019 – till now Ph.D., Physics Sc

Ph.D., Physics Science, University of Gdansk

Thesis title: Odwzorowania k-dodatnie w Fizyce (eng. k-positive maps in physics).

2015 - 2019

M.Sc. Physics Science, University of Gdansk

Thesis title: Nierozkładalne odwzorowania k-dodatnie na algebrach macierzowych (eng. k-positive indecomposable maps on matrix algebras).

2012 - 2015

B.A. Physics Science, University of Gdansk

Thesis title: Badanie krzywej rotacji galaktyki (eng. Study of the galaxy's rotation curve).

Employment History

2016 - 2018 Assistant - Translation Agency

2015 - 2016 | Instructor - Roboty i Spółka

2013 - 2015 Chef - **North Fish**

2012 - 2013 Customer Consultant - **Gabor** (Fashion store)

Selected Presentations & Invited Talks

Sep 2023 \blacksquare **Tokyo University, Japan** PBT with k copies of the input state.

Yukawa International Seminar 2023 Foundations and Developments of Quantum Information Theory in Kyoto, Japan Transformation of an unknown unitary operation: complex conjugation.

Aug 2023 **23rd Asian Quantum Information Science Conference in Seoul, Korea** Transformation of an unknown unitary operation: complex conjugation.

Nov 2022 Quantum Fundaments and Quantum Information Theory seminar in Kyoto, Japan Construction and characterization of 1-parameter (non)decomposable maps.

Dec 2021 **QUANTUMSPEEDUP in Gdansk, Poland** Reversing unknown unitary operation via quantum combs.

Research Publications

Journal Articles

D. Ebler, M. Horodecki, M. Marciniak, T. Młynik, M. T. Quintino, and M. Studziński, "Optimal universal quantum circuits for unitary complex conjugation," *IEEE Transactions on Information Theory*, vol. 69, no. 8, pp. 5069–5082, Aug. 2023, ISSN: 1557-9654. ODI: 10.1109/tit.2023.3263771.

P. Gnaciński and T. Młynik, "Keplerian rotation of our galaxy?" *Publications of the Astronomical Society of the Pacific*, vol. 129, no. 974, p. 044 101, Feb. 2017. ODOI: 10.1088/1538-3873/aa5c9b.

Pre-published

T. Młynik, H. Osaka, and M. Marciniak, *Characterization of k-positive maps*, 2024. arXiv: 2104.14058 [quant-ph]. **O** URL: https://arxiv.org/abs/2104.14058.

Skills

Languages Polish (native), English (reading, writing, and speaking B2+).

Coding Python, MATLAB, Wolfram Mathematica, LaTeX.

Databases Linear algebra, functional analysis, data analysis.

Misc. Academic research, teaching, training, consultation, LaTeX typesetting, and publishing.

Miscellaneous Experience

Projects and Grands

2021-2024 Sonata 16 - PhD student position, Symmetries and Entanglement in Quantum Circuits.

NAVA - PI, Academic Exchange "International scholarship exchange of PhD candidates and academic staff".

2021-2022 UGrants start 2 - PI, On a class of k-entanglement witness.

Certification

English Language Certification. Awarded by the University of Gdańsk.

References

Available on Request