

Tomasz Partryk Młynik

Born in 1992, living in Gdańsk, Poland

✉ tomek.mlynik@gmail.com

☎ +48 730-258-844

🐙 @Github_T.Mlynik

🌐 Tomek Młynik

🌐 <https://orcid.org/0000-0003-4182-907X>



Education

- 2019 – 2024 📖 **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**

Selected Presentations & Invited Talks

- Sep 2023 📖 **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 Fundamentals 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

- 1 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. [DOI: 10.1109/tit.2023.3263771](https://doi.org/10.1109/tit.2023.3263771).

- 2 P. Gnaciński and T. Młynik, “Keplerian rotation of our galaxy?” *Publications of the Astronomical Society of the Pacific*, vol. 129, no. 974, p. 044101, Feb. 2017. [DOI](#): 10.1088/1538-3873/aa5c9b.

Pre-published

- 1 F. Grosshans, M. Horodecki, M. Mura, *et al.*, *Multicopy quantum state teleportation with application to storage and retrieval of quantum programs*, 2024. arXiv: 2409.10393 [quant-ph]. [URL](#): <https://arxiv.org/abs/2409.10393>.
- 2 T. Młynik, H. Osaka, and M. Marciniak, *Characterization of k -positive maps*, 2024. arXiv: 2104.14058 [quant-ph]. [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.
- 2022 📖 **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

- 2021 📖 **English Language Certification**. Awarded by the University of Gdańsk.

References

Available on Request