

# Tomasz Partryk Młynik

Born in 1992, living in Gdańsk

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🌐 Tomek Młynik

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## Education

- 2019 – till now 📖 **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 📖 **Invited talk in Tokyo University, Japan** PBT with  $k$  copies of the input state.
- 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.

## 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. 044 101, Feb. 2017. [🔗 DOI: 10.1088/1538-3873/aa5c9b](https://doi.org/10.1088/1538-3873/aa5c9b).

### Pre-published

- 1 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](https://arxiv.org/abs/2104.14058).

## Skills

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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

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### Projects and Grands

2021-2024	📖	<b>Sonata 16 - PhD student position</b> , Symmetries and Entanglement in Quantum Circuits.
2021-2022	📖	<b>UGrants start 2 - PI</b> , On a class of k-entanglement witness.

### Certification

2021	📖	<b>English Language Certification</b> . Awarded by the University of Gdańsk.
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## References

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Available on Request