# Tomasz Partryk Młynik

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## Education

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| 2019 – till now | **Ph.D., Physics Science, University of Gdansk**<br>Thesis title: *Odwzorowania $k$-dodatnie w Fizyce (eng. $k$-positive maps in physics).* |
| 2015 – 2019 | **M.Sc. Physics Science, University of Gdansk**<br>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**<br>Thesis title: *Badanie krzywej rotacji galaktyki (eng. Study of the galaxy's rotation curve).* |

## Employment History

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| 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

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| 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 Fundaments 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.

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. 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

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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

### Projects and Grands

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| 2021-2024 | ▌ | **Sonata 16 - PhD student position**, Symmetries and Entanglement in Quantum Circuits. |
| 2021-2022 | ▌ | **UGrants start 2 - PI**, On a class of k-entanglement witness. |

### Certification

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| 2021 | ▌ | **English Language Certification**. Awarded by the University of Gdańsk. |

## References

Available on Request