

Dániel Vörös

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Education

2025 (expected) - **PhD** in Physics, Budapest University of Technology and Economics,
title: Quantum Spin Liquids in $SU(N)$ Heisenberg Models: Variational Monte Carlo Study of Dynamical Correlations
supervisor: Karlo Penc

2019 - **MSc** in Physics, Budapest University of Technology and Economics,
title: Semiclassical study of the dynamics of the sine-Gordon model
supervisor: Márton Kormos

2017 - **BSc** in Physics, Budapest University of Technology and Economics,
title: Area law in one-dimensional spin systems (Quantum information theory)
supervisor: Péter Vrana

Teaching experience

- subject: Fizika I, Responsible tutor: Dr. Kornis János, 8. semester
- subject: Fizika alapismeretek, Responsible tutor: Dr. Kornis János, 7. semester
- subject: Fizika 2i, Responsible tutor: Dr. Kornis János, 6. semester
- subject: Bevezető fizika, Responsible tutor: Dr. Kornis János, 5. semester
- subject: Fizika 2i, Responsible tutor: Dr. Kornis János, 4. semester
- subject: Bevezető fizika, Responsible tutor: Dr. Márkus Ferenc László, 3. semester
- subject: Fizika 2i, Responsible tutor: Dr. Kornis János, 2. semester
- subject: Bevezető fizika, Responsible tutor: Dr. Kornis János, 1. semester

Employment

- HUN-REN Wigner Research Centre for Physics 2019-2023, part-time research assistant

Posters and presentations

1. Poster at Topological Quantum Matter in Magnetic and Synthetic Platforms, 8 - 12 July 2024, Dresden
Title: Correlations in $SU(4)$ and $SU(6)$ Dirac spin liquids
2. Online poster at Boundary and Bulk Criticality, 21-25 February 2022
Title: The dynamical structure factor of the $SU(3)$ Heisenberg chain: The variational Monte Carlo approach
3. Online presentation at APS March Meeting, March 15–19 2021
Title: Semiclassical theory of finite temperature dynamics of the sine-Gordon model
4. Online poster at Winter School on Strongly Correlated Quantum Matter, 30 November - 18 December 2020
Title: Semiclassical theory of finite temperature dynamics of the sine-Gordon model

Attended schools

- Algorithms for Lattice Fermions - User Workshop, 15-19 July 2024, Würzburg (online)
- Winter School on Strongly Correlated Quantum Matter, 30 November - 18 December 2020 (online)
- Autumn School on Correlated Electrons: Many-Body Methods for Real Materials, 16-20 Sept. 2019, Forschungszentrum Jülich

Relevant skills

Programming

- C++ (static and dynamic variational Monte Carlo used for quantum spin liquids)
- python (data evaluation, plotting, semiclassical Monte Carlo used for the Sine-Gordon model)

Spoken languages

- English (C1 exam, written and spoken)
- Hungarian (mother tongue)
- Spanish (second mother tongue)
- Slovak (C1 exam, written and spoken)