

Nuriya Nurgalieva

CONTACT INFORMATION	Institute for Theoretical Physics ETH Zurich Wolfgang-Pauli-Strasse 27 8093 Zurich Switzerland	nuriya@phys.ethz.ch theoryverse.com
PERSONAL DATA	Born October 20, 1995 in Kazan, Russia. Native speaker of Russian and Tatar; fluent in English; proficient in German.	
RESEARCH INTERESTS	Quantum foundations, epistemic logic, quantum information theory, quantum thermodynamics, resource theories, quantum computing, foundations of quantum intelligence, quantum gravity.	
EMPLOYMENT	ETH Zurich , Switzerland PhD student and teaching assistant, 2018 - present. - Principal Investigator: Renato Renner (quantum information theory group).	
EDUCATION	ETH Zurich , Switzerland Master degree (M. Sc. ETH Zurich), Physics, 2018. <ul style="list-style-type: none">• Overall grade: 5.72 (out of 6). Thesis grade: 6.• Thesis: <i>Logic of agents in quantum settings</i>.• Thesis supervisors: Lidia del Rio and Renato Renner (ETH Zurich). Moscow Institute of Physics and Technology (MIPT) , Russia Bachelor degree with honors (B. Sc.), Applied Physics and Mathematics, 2016. <ul style="list-style-type: none">• Overall grade: 9.7 (out of 10). Thesis grade: 10.• Thesis: <i>Implementation of simplest Boolean operations (yes/no) for detection of low-mass molecules on the base of lateral flow immunoassay</i>.• Thesis supervisors: Maxim Nikitin (MIPT).	
PUBLICATIONS	NN and Renato Renner, <i>Testing quantum theory with thought experiments</i> , Contemporary Physics, 61(3), 193-216, DOI: 10.1080/00107514.2021.1880075 (2021). Patrick Fraser, NN and Lidia del Rio, <i>Fitch's knowledge axioms are incompatible with quantum theory</i> , arXiv:2009.00321 (2020). V. Vilasini, NN and Lidia del Rio, <i>Multi-agent paradoxes beyond quantum theory</i> , New J. Phys. 21, 113028, DOI: 10.1088/1367-2630/ab4fc4, arXiv:1904.06247 (2019). NN and Lidia del Rio, <i>Inadequacy of modal logic in quantum settings</i> , EPTCS 287, pp. 267-297, DOI: 10.4204/EPTCS.287.16 (2019).	

CONFERENCES

Invited talks

- *Observers as Primitives*, Foundations of Quantum Mechanics Workshop, Perimeter Institute, Waterloo, Canada (August 2018).

Workshop talks

- *Grover's algorithm*, Open Source Quantum Computing Workshop, ETH Zurich, Switzerland (June 2019).

Contributed talks

- *Inadequacy of modal logic in quantum settings*, YQIS, University of Vienna, Vienna, Austria (September 2018).
- *Inadequacy of modal logic in quantum settings*, 15th International Conference on Quantum Physics and Logic, Dalhousie University, Halifax, Canada (June 2018).

Posters

- *Inadequacy of modal logic in quantum settings*, Summer School on Mathematical Philosophy, LMU, Munich, Germany (July 2019).
- *Inadequacy of modal logic in quantum settings*, QIP, University of Boulder, Colorado, USA (January 2019) - **Best Poster Award**.
- *Inadequacy of modal logic in quantum settings*, The 13th Conference on the Theory of Quantum Computation, Communication and Cryptography, University of Sydney, Sydney, Australia (July 2018).
- *Inadequacy of modal logic in quantum settings*, Quantum2Classical, University of Strathclyde, Glasgow, UK (June 2018).
- *Quantum Reference Frames for Experiments where Observers are Measured*, Quantum Networks Workshop, University of Oxford, Oxford, UK (August 2017).

Talks in group seminars during scientific visits

- 2020: University of Innsbruck.
- 2018: University of Oxford (UK), University of Cambridge (UK), University of York (UK).

EVENTS ORGANIZATION

- Together with Lidia del Rio: QuID - Quantum Information for developers, summer school and hackathon, Zurich, Switzerland (September 2019).
- Together with Lidia del Rio: Solstice of Foundations - a summer school on quantum foundations, Zurich, Switzerland (June 2019).
- Together with Lidia del Rio: Open Source Quantum Computing Workshop - ETH Zurich, Switzerland (June 2019).
- Joint with RQC: Quantum hackathon for The First Academic School on Quantum Communications, Sochi, Russia (February 2019).
- Together with Lidia del Rio: QuID - Quantum Information for developers, summer school and hackathon, Zurich, Switzerland (September 2018).

SUPERVISION OF
STUDENTS

ETH Zurich

- Co-supervisor with Lidia del Rio and Renato Renner:
 - Ladina Hausmann, *Phenomenological thermodynamics of a black hole* (Master thesis, 2020-2021).
 - Simon Mathis, *Thought experiments on quantum computer* (semester project, 2019).
 - Ladina Hausmann, *On multi-agent logical paradoxes in epistemically-restricted hidden variable theories* (semester project, 2020).
 - Oliver Knapp, *$SU(2)$ symmetry and reference frames* (semester project, 2020).
 - Anne-Catherine de la Hamette, *Quantum reference frames from quantum communication* (semester project, 2019).
 - Romain Moyard, *Path integral formalism and quantum foundations* (semester project, 2019).
- Co-supervisor with Lidia del Rio and Joe Renes:
 - Xinyang She, Davide Materia, Alessandro Bruno, *Benchmarking quantum programming languages through Shor's algorithm* (quantum engineering semester workshop, 2020).

TEACHING
EXPERIENCE

ETH Zurich

- Teaching assistant for the courses of General Relativity, Quantum Information Processing, Philosophical Aspects of Quantum Mechanics, Electrodynamics, Quantum Physics for Non-Physicists, Advanced Topics in Quantum Information (2018 - present).

GRANTS AND
AWARDS

Moscow Institute of Physics and Technology

- Recipient of the study scholarship with distinction (2012 - 2016).
- Prizewinner of the MIPT Physics Olympiad for students (2014, 2015).

High school

- Winner and runner-up in numerous regional and national competitions in Physics, Maths, Chemistry and Literature.

EXTRA-CURRICULAR
ACTIVITY

- Co-founder of SQUID, a non-profit for organizing summer schools and workshops in quantum physics (squids.ch).