

RNDr. Daniel Reitzner, PhD.

Research Center for Quantum Information
Institute of Physics
Slovak Academy of Sciences
Dúbravská cesta 9
845 11 Bratislava
Slovak Republic

☎ (+421) 2 2091 0708

☎ (+421) 908 325 159

✉ daniel.reitzner@savba.sk (academic)

✉ danreitzner@gmail.com (personal)

web: www.quantum.physics.sk/people/reitzner

Curriculum Vitae

(June 27, 2017)

Personal data

Name	Daniel Reitzner
Nationality	Slovak
Date of Birth	26. May 1983
Place of Birth	Košice-Šaca, Czechoslovakia (now Slovakia)
Gender	Male

Work positions

Apr. 2015–present	Marie Curie fellow (group of doc. Ziman), Research Center for Quantum Information Institute of Physics, Slovak Academy of Sciences
Aug. 2014–Mar. 2015	Researcher (group of doc. Ziman), Research Center for Quantum Information Institute of Physics, Slovak Academy of Sciences
Jan. 2014–May 2014	Fulbright Scholar , Department of Physics, Hunter College of CUNY, USA
Oct. 2013–Dec. 2013	Researcher (group of doc. Ziman), Research Center for Quantum Information Institute of Physics, Slovak Academy of Sciences (during period Jan. 2014–July 2014 on a leave without pay)
Aug. 2011–Sept. 2013	Researcher (group of Prof. Wolf), M5 — Mathematical Physics, Faculty for Mathematics Technische Universität München
Sept. 2010–Aug. 2011	Researcher (group of Prof. Bužek), Research Center for Quantum Information Institute of Physics, Slovak Academy of Sciences (during period Aug. 2011–Sept. 2013 on a leave without pay)

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Education

- Sept. 2006–Aug. 2010** PhD student under the supervision of Prof. RNDr. Vladimír Bužek, DrSc.
Research Center for Quantum Information
Institute of Physics, Slovak Academy of Sciences
Field of study: General and mathematical physics, Quantum information processing
Title of the thesis: *Utilisation of Scattering Quantum Walks in Searches on Highly Symmetric Graphs*
- Apr. 2009** Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava
Rerum Naturalium Doctor (RNDr.) in the field 4.1.1 *Physics*, specialization *Theoretical Physics*
Title of the rigor thesis: *Quantum Walk Searches*
- Sept. 2004–Aug. 2006** Faculty of Science, Pavol Jozef Šafárik University in Košice
Field of study: Physics, specialization Computational Physics
Graduated in 2004 and received Magister degree (M.Sc. equivalent) under the supervision of doc. RNDr. Denis Horváth, CSc.
Title of the thesis: *Monte Carlo Method in Construction of Large-scale Hamiltonians of Selected Spin Systems*
- Sept. 2002–Aug. 2004** Faculty of Science, Pavol Jozef Šafárik University in Košice
Field of Study: Physics
Graduated in 2004 and received Bachelor degree (B.Sc. equivalent)

Notable Research Visits

- Nov. 2016** Prof. Mark Hillery, Hunter College, The City University of New York, USA (2 weeks)
- Nov. 2013** Prof. Giulio Chiribella, Tsinghua University, Beijing, China (1 week)
- Apr. 2012** Dr. Teiko Heinosaari, Faculty of Mathematics and Natural Sciences, University of Turku, Finland (1 week)
- Mar. 2012** Dr. Yasser Omar, SQIG, Department of Mathematics, Instituto Superior Técnico, Lisbon, Portugal (1 week)
- Apr. 2011** Dr. Teiko Heinosaari, Faculty of Mathematics and Natural Sciences, University of Turku, Finland (1 week)
- Jan. 2011** Dr. Rob Spekkens, Perimeter Institute, Canada (1 week)
- Mar. 2009** Dr. Yasser Omar, SQIG, Department of Mathematics, Instituto Superior Técnico, Lisbon, Portugal (1 week)
- Oct. 2008** Prof. Mark Hillery, Hunter College, The City University of New York, USA (1 month)

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Training

Aug. 2014	QESS Summer School, Smolenice, Slovak Republic
Feb. 2010	46 th Karpacz Winter School of Theoretical Physics, Łądek Zdrój, Poland
Sept. 2009	V4 Summer School in Quantum information, Budmerice, Slovak Republic
Aug. 2007	International Summer School in Quantum Information Processing and Control (QUIC 2007), Maynooth, Ireland
Feb. 2007	Summer School on Symplectic Geometry, Bratislava, Slovak Republic
Dec. 2006–July 2007	Soft skills trainee in <i>Institute of Advanced Studies</i>
Dec. 2006	<i>Soft skills</i> training, Budmerice, Slovak Republic
Aug. 2006	Quantum Information Processing IRC/QAP EC Summer School, Gregynog, Tregynon, Wales

Conferences attended with active participation

June 2017	14th Central European Quantum Information Processing Workshop, Smolenice, Slovakia Talk: <i>Navigating a Maze Using Quantum-Walk Searches</i>
Dec. 2016	Focus Meeting — Mathematical foundations of quantum thermodynamics, Smolenice, Slovakia Poster: <i>Incompatible measurements on Causal Networks</i>
Nov. 2016	Workshop of Quantum Simulation and QuantumWalks 2016, Prague, Czech Republic Talk: <i>Decoherence in Quantum Walk Searches</i>
June 2016	13th Central European Quantum Information Processing Workshop, Valtice, Czech Republic Poster: <i>Incompatible measurements on quantum causal networks</i>
Jan. 2016	Linear Matrix Inequalities, Semidefinite Programming and Quantum Information Theory 2016 Invited talk: <i>Compatibility of Quantum Testers</i>
Oct. 2015	Quantum Unconference, Menesjärvi, Finland
Sept. 2015	21st Conference of Slovak Physicists, Nitra, Slovakia Invited talk: <i>Quantum Searches by Quantum Walks</i>
June 2015	12th Central European Quantum Information Processing Workshop, Telč, Czech Republic Talk: <i>Noise Robustness of the Incompatibility of Quantum Measurements: Incompatibility as a Resource</i>

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- Sep. 2014** Quantum Sequential Measurements and Classical Complexity (FQXi),
Siegen, Germany
Talk: *Compatibility: Noise robustness of incompatibility*
- Oct. 2013** Noise Information & Complexity @ Quantum Scale, Erice, Italy
Talk: *Fault-ignorant Quantum Search*
- Sept. 2013** Workshop on “Incompatible Quantum Measurements”, München, Ger-
many (organizer)
Talk: *Measuring non-coexistence of two projections*
- June 2013** 10th Central European Quantum Information Processing Workshop,
Valtice, Czech Republic
Talk: *Fault-ignorant Quantum Search*
- Sept. 2012** COQUIT Workshop, Torino, Italy
Talk: *Noisy Grover Search*
- June 2012** 9th Central European Quantum Information Processing Workshop,
Smolenice, Slovakia
Poster: *Incompatibility of Measurement Devices*
- May 2012** Pécs Workshop on Quantum Information and Quantum Optics, Pécs,
Hungary
Invited talk: *Quantum Compatibility: When Two Measurements Come From
One*
- June 2011** 8th Central European Quantum Information Processing Workshop, Zno-
jmo, Czech Republic
Poster: *Unambiguous Discrimination of grover Oracles*
- June 2010** 7th Central European Quantum Information Processing Workshop,
Valtice, Czech Republic
Talk: *Scattering quantum walks in searches for graph anomalies*
- June 2009** 6th Central European Quantum Information Processing Workshop,
Jindřichuv Hradec, Czech Republic
Talk: *Quantum Searches on Highly Symmetric Graphs*
- June 2008** 5th Central European Quantum Information Processing Workshop, Telč,
Czech Republic
Talk: *Quantum-Scattering Searches on Highly Symmetric Graphs*
- May 2008** Quantum Prague: Workshop on modern trends in quantum optics and
quantum information, Prague, Czech Republic
Invited talk: *Quantum-scattering-walk Searches on Highly Symmetric Graph
Structures*
- June 2007** 4th Central European Quantum Information Processing Workshop,
Valtice, Czech Republic
Talk: *Generalizing Deterministic Quantum Computation with One Qubit*

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- Apr. 2007** Informal Quantum Information gathering 5, Innsbruck, Austria
Talk: *Scattering Quantum Random Walk on a Hypercube*
- Dec. 2006** CONQUEST Young European Physicists meeting 2006, Budmerice, Slovak Republic
Talk: *Quantum walks based on an interferometric analogy.*
- July 2004** 12th Czech and Slovak Conference on Magnetism CSMAG'04, Košice, Slovak Republic
Poster: *The Partitioning of Magnetic Configurations Using the Self-organized Neural Network*

Other scientific contributions

- Honors**
- Young Physicists Competition of Slovak Physical Society, 2nd place (2015)
 - Marie Curie fellowship, COFUND scheme SASPRO (Apr. 2015–Mar. 2018)
 - Fulbright stipend (Jan. 2014–May 2014)
 - Štefan Schwarz's Supporting Fund for Forming Postdoctoral Positions in SAS (2011–2014)
 - Finalist of Intenda Foundation scholarship *Supporting Individualities* (2009)
 - Prize of the rector of University of Pavol Jozef Šafárik (2006)
 - Numerous prizes of local mathematics and physics olympiad (1993–2001)
- Membership**
- Fulbright alumni
 - Club of Individualities, Intenda Foundation (Since 2009)
- Referee for**
- Physical Review Letters (APS)
 - Physical Review A (APS)
 - The European Physical Journal D
 - Foundations of Physics (Springer)
 - Journal of Physics A (IOPscience)
 - Physica A (Elsevier)
- Popularization**
- General audience talk on *Where does the Quantum World Begin?*, Košice, Dec. 2016
 - General audience talk on *The Strange World of Quantum Mechanics*, New York, Apr. 2014; Bratislava, Nov. 2014
 - Young Physicists' Tournament, national round, referee (2010)
 - Institute of Physics Open Day (Slovak Academy of Sciences)

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Scientometry published papers: 21
 citations (w/o self-citations): 186
 h-index: 8

Present participation on projects

QWIN SASPRO Marie Curie COFUND scheme, 0055/01/01
 Quantum Walks and Incompatibility (Apr. 2015–Mar. 2018)

QWIN VEGA 2/0151/15
 Quantum Walks and Incompatibility (2015–2018)

ProQuNet APVV SK-PT-2015-0029
 Probing quantum networks with quantum walks (2016–2017)

QIMABOS APVV-0808-12
 Quantum information of many-body systems (Oct. 2013–Sept. 2017)

QETWORK APVV-14-0878
 Quantum Theory on Graphs and Networks (July 2015–June 2019)

Personal skills and competences

Mother Tongue Slovak

Other Languages English — advanced (C1)
 *General language state exam — 17. May 2002, State Language School,
L. Novomeského Sq. 4, Košice*
 German — elementary (A2)

Organisational Skills 14th Central European Quantum Information Processing Workshop,
Smolenice, Slovakia (2017)
 Focus Meeting — Mathematical foundations of quantum thermodynam-
ics, Smolenice, Slovakia (2016)
 13th Central European Quantum Information Processing Workshop,
Valtice, Czech Republic (2016)
 Workshop on Incompatible Measurements 2013, München, Germany
 COQUIT Workshop 2012, München, Germany
 8th Central European Quantum Information Processing Workshop, Zno-
jmo, Czech Republic (2011)
 7th Central European Quantum Information Processing Workshop,
Valtice, Czech Republic (2010)
 Participated in organisation of Soft-skills meeting in Piešťany, June 2007

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Prepared projects	QWIN VEGA 2/0151/15 (principal investigator) QWIN SASPRO 0055/01/01 (principal investigator) <i>DFG International Scientific Events</i> PQW APVV SK-PT-0008-10 (principal investigator) V4 QUTE IVF 20820121 QWOSSI APVV LPP-0264-07 CE QUTE APVV VVCE-0052-07
Principal investigator	ProQuNet APVV SK-PT-2015-0029 (2016-2017) QWIN VEGA 2/0151/15 (2015–2018) QWIN SASPRO 0055/01/01 (Apr. 2015–Mar. 2018) PQW APVV SK-PT-0008-10 (July 2011–Dec. 2012)
Computer Skills	Programming languages: C, Python, Mathematica, HTML and CSS (basics), SQL, C++ (basics) Other programs and applications: Mathematica, \LaTeX , GNUPlot
Teaching Experience	Mathematical structures of quantum theory, exercises (1 semester, FMFI) Seminar on Uncertainty relations (1 semester, TUM) Analysis II for Physicists, exercises (1 semester, TUM) Seminar on “Mathematics & Magic” (2 semesters, TUM) Analysis III for Physicists, exercises (1 semester, TUM)

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