

CURRICULUM VITAE

Tomáš Bzdušek

Education

- 2013 – Doctoral studies at the Institute for Theoretical Physics, ETH Zürich
- 2010 – 2013 Faculty of Mathematics, Physics and Informatics, Comenius University in Bratislava
Specialization: *Theoretical physics*, received degree: *Magister* (master)
Attended an exchange study programme at ETH Zürich on autumn semester 2011.
- 2007 – 2010 Faculty of Mathematics, Physics and Informatics, Comenius University in Bratislava
Specialization: *Physics*, degree received: *Bakalár* (bachelor)
- 1999 – 2007 Gymnázium Pierra de Coubertina, Piešťany
Maturita in Slovak Language & Literature, English, Mathematics, Physics, Chemistry.

Research Experience

- Doctoral thesis: Thesis title: *Spin-orbital entanglement, topology and electronic correlations in iridates*
Group: **Strongly correlated electrons**, Prof. Dr. Manfred Sigrist
Advisor: Dr. Andreas Rüegg
- Master's thesis: Thesis title: *Anomalous spectral function of a superconductor*
Advisor: Doc. RNDr. Richard Hlubina, DrSc
- Bachelor's thesis: Thesis title: *Study of Superconductivity in the Disordered Hubbard Model*
Advisor: Doc. RNDr. Richard Hlubina, DrSc
- Student Science Conference 2009 Work name: *Mapping the width of thin layers using spectral reflectometry*
Advisor: RNDr. Pavel Vojtek, CSc.
Winner of the university conference in *Experimental Physics* section

Workshops, summer schools and conferences

- 08/2015 Materials and Mechanisms of Superconductivity
Geneva, Switzerland (23 Aug 2015 – 28 Aug 2015)
- 08/2015 School and Workshop on Strongly Correlated Electronic Systems
Trieste, Italy (10 Aug 2015 – 21 Aug 2015)
- 06/2015 Gordon Research Conference on Topological & Correlated Matter
Hong-Kong, China (28 Jun 2015 – 03 Jul 2015)
- 01/2015 MaNEP Winter School: Shedding light on correlated electrons
Saas-Fee, Switzerland (18 Jan 2015 – 23 Jan 2015)
- 10/2014 Training Course in the Physics of Strongly Correlated Systems
Vietri sul Mare, Italy (06 Oct 2014 – 17 Oct 2014)
- 07/2014 Boulder School 2014: Modern Aspects of Superconductivity
Boulder, Colorado (30 Jun 2014 – 25 Jul 2014)
- 06/2014 MaP Graduate Symposium
Zürich, Switzerland (05 Jun 2014)
- 01/2013 Winter School on Mathematical Physics
Jánské Lázně, Czech Republic (20 Jan 2013 – 26 Jan 2013)
- 08/2012 Eurasia-Pacific Summer School and Conference on Strongly Correlated Electrons
Turunç/Marmaris, Turkey (06 Aug 2012 – 17 Aug 2012)
- 09/2010 Models of Modern Physics, Hight Energy Physics Summer School
Svit, Slovakia (12 Sept 2010 – 19 Sep 2010)

Publications

- ▶ **T. Bzdušek**, Q. Wu, A. Rüegg, M. Sigrist, A. A. Soluyanov:
Nodal chain metals
[arXiv:1501.03029](#) (2016)
- ▶ **T. Bzdušek**, A. Rüegg, M. Sigrist:
Weyl semimetal from spontaneous inversion symmetry breaking in pyrochlore oxides
Physical Review B **91**, 165105 (2015) [[arXiv:1501.03029](#)]
- ▶ **T. Bzdušek**, R. Hlubina:
What is the Pairing Glue in the Cuprates? Insights from Normal and Anomalous Propagators
Philosophical Magazine **95**, 609-621 (2015) [[arXiv:1401.5598](#)]
- ▶ **T. Bzdušek**, J. Imriška, J. Závodný et al.: *Zbierka FX*
A book of physics problems and detailed solutions for advanced high-school students.
Published by Trojsten, December 2009, ISBN 978-80-970297-0-8.

Teaching Experience

spring 2016	Teaching assistant (TA) for <i>Solid State Theory</i> lecture by PD Dr. Vadim Geshkenbein
autumn 2015	TA for <i>Statistical Physics</i> lecture by Prof. Dr. Manfred Sigrist
spring 2015	TA for <i>Mechanics of Continua</i> lecture by Prof. Dr. Manfred Sigrist
autumn 2014	TA for <i>Phase Transitions and Critical Phenomena</i> lecture by PD Dr. Vadim Geshkenbein
spring 2014	TA for <i>Solid State Theory</i> lecture by Prof. Dr. Manfred Sigrist
autumn 2013	TA for <i>Unconventional Superconductivity</i> lecture by PD Dr. Vadim Geshkenbein

Work Experience

2009 – 2012	Popular lectures for high school students. Work for APVV (Slovak Research and Development Agency). My lectures: <i>Play of light and colors: A rainbow</i> , <i>Scientific show</i> , and <i>Is the space curved?</i> .
2007 – present	Organizing <i>The Physics Correspondence Competition</i> (FKS) Experience with teamwork and administrative work, giving lectures and seminars about high school physics and popular physics. Work with outstanding high school students. Since 2009 managing special challenging "FX" category.
2007 – 2011	Training students for the Physics Olympiad and for the Young Physicists' Tournament, I worked at Gymnázium Jura Hornca in Bratislava, at Gymnázium Grösslingová in Bratislava, and at Gymnázium Pierra de Coubertina in Piešťany.

Other Skills and Experience

Languages	Native Slovak, C1 English, A2-B1 German. I can fluently communicate with Czech and Polish thanks to their language similarity to Slovak.
Computer skills	Matlab & Mathematica, typesetting in \LaTeX , experience with html & css,

Top Achievements at International Competitions

- ▶ The 3rd place, the 3rd *International Student Physicists' Tournament*, Russia, 2011.
Captain of the Comenius University team, special prize for the best report.
- ▶ The 2nd prize, the 17th *International Mathematical Competition*, Bulgaria, 2010.
- ▶ The gold medal (7th place worldwide), the 38th *International Physics Olympiad*, Iran, 2007.
[Special prize](#) for the highest score in experimental exam.
- ▶ The bronze medal (7th place worldwide), the 20th *International Young Physicists' Tournament*, Korea, 2007.
- ▶ The absolute winner, the 3rd *European Union Science Olympiad*, Ireland, 2005.

Interests

- ▶ Physics, mathematics, puzzlehunts, and problem solving in general.
- ▶ Music: Playing piano (studied in 1995-2006), guitar & singing (learned on my own).
- ▶ Great interest in [hiking](#), running and swimming.