Curriculum vitae - Libor Šmejkal

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Research and technology interests

Topological antiferromagnetic spintronics, relativistic spin transport from first principles, anomalous Hall effect; Electronic structure and topology of complex magnets: magnetic Dirac, Weyl semimetals and topological insulators; Topological and quantum technologies, applications of physics in finance

Education

2018	*PhD candidate - in progress*, Charles University, Prague, Czech Republic supervisor: Prof. Tomáš Jungwirth; co-supervisor: Prof. Jairo Sinova
2014	**MSc Condensed Matter Physics** *with honours* (1.00)**,** Masaryk University, Brno, Czech Republic
2013	**MSc Theoretical Physics** *with honours* (1.00)**,** Masaryk University, Brno, Czech Republic
2012	**Erasmus exchange program**, University of Vienna, Vienna, Austria
2011	**BSc Physics**, Masaryk University, Brno, Czech Republic

Professional appointments

Since 2016	INSPIRE group, Johannes Gutenberg University, Mainz, Germany, *PhD candidate*
Since 2013	Department of Spintronics and Nanoelectronics, Institute of Physics, Academy of Sciences of the Czech Republic, v. v. i., Prague, *PhD candidate*
2013, 2014	Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic, *external cooperation*
2009-2013	Institute of Physics of Materials, Academy of Sciences of the Czech Republic, v. v. i., Brno, *undergraduate research assistant*
2011	Faculty of Science, Department of Physical Electronics, Masaryk University, Brno, Czech Republic, *external cooperation*

Selected invited talks

2018, Aug	Physics and Applications of Spin Phenomena in Solids 2018 (Linz, Austria)
2018, Jul	International Conference on Magnetism 2018 (San Francisco, USA)
2017, Oct	Workshop on Antiferromagnetic Spintronics (Grenoble, France)
2017, Oct	Conference on Weyl Fermions in Materials (Trieste, Italy)
2017, Jun	Spin Dynamics in the Dirac Systems - SPICE conference (Mainz, Germany)

Grants

2015-2017	Grant Agency of Charles University, co-investigator, ~27.500 € *Relativistic theory of spin dependent transport in spintronics materials*
2017-2018	IT4I, computational time at supercomputer, co-investigator

Selected publications

LŠ and T. Jungwirth, Symmetry and topology in antiferromagnetic spintronics, Topology in Magnetism, Eds. J. Zang, V. Cros, A. Hoffmann, *Springer International Publishing* (2018)
Chapter in book

LŠ, Yuriy Mokrousov, Binghai Yan, Allan H. MacDonald, Topological antiferromagnetic spintronics, *Nature Physics* **14**, 242–251 (2018)
Invited review in focused issue https://www.nature.com/collections/wplplmmvnt

S. Yu. Bodnar, **LŠ**, I. Turek, T. Jungwirth, O. Gomonay, J. Sinova, A.A. Sapozhnik, H.-J. Elmers, M. Kläui, M. Jourdan, Writing and reading antiferromagnetic Mn_2Au: Néel spin-orbit torques and large anisotropic magnetoresistance, *Nature Communications* **9**, 348 (2018)
Nature Communications Editors' Highlights https://www.nature.com/collections/rcdhyvxytb

LŠ, J. Železný, J. Sinova, T. Jungwirth, Electric control of Dirac quasiparticles by spin-orbit torque in an antiferromagnet, Phys. Rev. Lett. **118** (2017) 106402-106402

Selected awards and academic achievements

2018	International conference on magnetism (San Francisco), Student presentation award *finalist*
2015	FameLab (Prague) – communication of science competition - *national finalist*
2012-2013	Student research scholarships (Masaryk University)
2012-2014	Academic scholarships (Masaryk University)
2008	Diploma of the Ministry of Education, Youth and Sports of the Czech Republic (Prague)
2008	International Young Physicists Tournament (Trogir), *highest points achieved by Czech Republic team within a decade*
2008	Young Physicists Tournament, national tournament, *winner - leader of Mendel grammar school team*
2007	QUANTA (Lucknow) - *4th place in mental abilities quiz*
2007	International Young Physicists Tournament (Seoul) – *Czech Republic team*
2007	Student Professional Activity in Physics (Prostejov) – *national finalist*
2000,2001,2004	Mathematical Olympiad – *winner of regional round*

Languages proficiency

English (B2-C1), German (B2-C1), Czech (native)

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