Szabolcs Vajna

Curriculum Vitae

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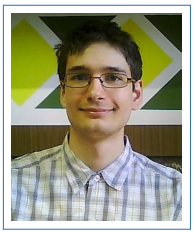

Personal data

Born: 1989.02.05., Budapest, Hungary

Studies

2003–2007 Berze Nagy János Grammar School, Gyöngyös

2007–2010 Budapest University of Technology and Economics BSc in Physics
- BSc thesis: Anisotropic Bychkov-Rashba effect on metallic surfaces
- Qualified as: exellent
- Supervisor: Prof. László Szunyogh, BUTE Department of Theoretical Physics

2010–2012 Budapest University of Technology and Economics MSc in Physics.
- MSc thesis: Modelling of Communication Dynamics
- Qualified as: highest honors
- Supervisor: Prof. János Kertész, BUTE Department of Theoretical Physics

2012– Budapest University of Technology and Economics PhD studies.
- Supervisor: Balázs Dóra, BUTE Department of Physics

Language skills

2005 English intermediate certificate (B2)

2013 French elementary certificate (B1)

2014 TOEFL ITP score 620/677

Awards

2009, 2011 Fellowship granted by the Republic

2010 BUTE Students' Scientific Association contest *1st prize* and *dean's reward* (in Theoretical Physics)

2011 National Students' Scientific Association contest *1st prize* (in Solid State Physics)

2011 BUTE Students Scientific Association contest *reward of "Graduate School of Mathematics and Computer Science"*

2012 BMe Research Grant 2nd prize (Faculty of Natural Sciences)

2013 National Students' Scientific Association contest *1st prize* (in Physics of Complex Systems)

Publications

Sz. Vajna, E. Simon, A. Szilva, K. Palotás, B. Ujfalussy, and L. Szunyogh, *"Higher-order contributions to the Rashba-Bychkov effect with application to the Bi/Ag(111) surface alloy"*, Physical Review B **85**, 075404 (2012)
`dx.doi.org/10.1103/PhysRevB.85.075404`

Sz. Vajna, B.Tóth, J.Kertész, *"Modelling bursty time series"*, New J. Phys. **15** 103023 (2013) `dx.doi.org/10.1088/1367−2630/15/10/103023`

M. Vigh, L. Oroszlány, Sz. Vajna, P. San-Jose, Gy. Dávid, J. Cserti, B. Dóra *"Diverging dc conductivity due to a flat band in disordered pseudospin-1 Dirac-Weyl fermions"*, Physical Review B **88**, 161413(R) (2013)
dx.doi.org/10.1103/PhysRevB.88.161413

Sz. Vajna, B. Dóra, *"Disentangling dynamical phase transitions from equilibrium phase transitions"*,Phys. Rev. B **89**, 161105(R) (2014)
dx.doi.org/10.1103/PhysRevB.89.161105

Teaching experience

2007– BUTE Movement for Talents FEB preparatory summer school (linear algebra, analysis)

2009– Practical courses for electric engineers in physics 1 (mechanics) and 2 (electrodynamics)

2013– Practical courses for physicists in solid state physics (BSc and MSc courses)

Summer schools, conferences, internships

2011 Internship at BECS, Aalto University, Finland (3 weeks)

2013 Summer school: Exact and Numerical Models of Low-Dimensional Quantum Structures, August 4 - August 12, 2013, ITAP Dereozu Campus, Turunc, Marmaris, Turkey

2013 Predoc school: Manipulation of quantum degenerate gases, September 16-27, 2013, Les Houches, France (poster presentation)

2014 Winter school: Quantum criticality in condensed matter, March 02-09, 2014, Karpacz, Poland (oral presentation)

2014 Conference: Topological matter out of equilibrium, March 27-29, 2014, MPIPKS, Dresden, Germany (poster presentation)

Research interest

Condensed matter physics, low dimensional systems (graphene, topological insulators, surface states), non-equilibrium physics

Human dynamics

Computer skills

C, Mathematica, Matlab, LaTeX