Dr. Mikhail Titov

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16.09.2014

CURRICULUM VITAE

PERSONAL

Born:	July 8, 1972 Krasnoyarsk Russia
Married to:	Alina Titova
Children:	Anna (23/09/1992) Daniil (17/04/1994) Maria (21/12/2000) Mark (11/03/2012)
Languages:	Russian (native) English (fluent) German (B2) Dutch (A2)
Citizenship:	German
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EDUCATION & TRAINING

1/09/1989 – 1/07/1993	
1/09/1993 – 1/07/1995	Graduate student Field theory and theoretical high-energy physics Faculty of Physics St.Petersburg State University, Russia
1/02/1996 – 1/09/1998	PhD student Department of Theoretical Physics Petersburg Nuclear Physics Institute Gatchina, Russia
1/09/2007 – 1/06/2010	Postgraduate Training for Higher Education Degree Heriot-Watt University Edinburgh, UK

DEGREES

29/06/1993	Bachelor degree in Physics Thesis: "*Quantum chromodynamics in the light-cone coordinates*" St. Petersburg State University, St.Petersburg, Russia Supervisor: Prof. V.A. Franke
21/06/1995	Master degree in Theoretical Physics (Diplom) Diploma thesis: "*Quasi-particle damping in two-dimensional high-temperature superconductors*" St.Petersburg State University, St.Petersburg, Russia Supervisor: Prof. S.V. Maleyev
21/10/1999	PhD degree in Physics PhD thesis: "*Spectral correlations and statistics of resonances in quantum chaotic scattering*" Petersburg Nuclear Physics Institute, Gatchina 188300, Russia Supervisor: Prof. Y.V. Fyodorov
19/11/2010	Post-Graduate Certificate of Academic Practise (PGCAP)

POSITIONS

01/09/1998	staff researcher (tenure)
– 08/01/2000	group: "*Theoretical condensed matter physics*"
	directed by Prof. S.V. Maleyev
	Department of Theoretical Physics
	Petersburg Nuclear Physics Institute, 188300 Gatchina, Russia
09/01/2000	FOM post-doctoral researcher
– 31/10/2001	group: "*Mesoscopic Physics*"
	directed by Prof. Dr. C.W.J. Beenakker
	Instituut-Lorentz, Leiden University, Leiden, the Netherlands
01/11/2001	staff researcher (Wissenschaftlicher Mitarbeiter)
– 31/10/2005	group: "*Waves in complex media and mesoscopic phenomena*"
	directed by Dr. H. Schomerus
	Max-Planck-Institute for Physics of Complex Systems
	Dresden, Germany
01/11/2005	senior researcher (Wissenschaftlicher Mitarbeiter)
– 18/09/2007	group: "*Quantum transport*"
	directed by Prof. Dr. W. Belzig
	Konstanz University, Konstanz, Germany
19/09/2007	Lecturer in Physics (tenured since September 2010)
– 31/03/2012	head of the group: "*Condensed matter theory: mesoscopic physics*"
	Heriot-Watt University
	Edinburgh, UK
01/04/2012	University Docent
– present	Institute for Molecules and Materials, Radboud University Nijmegen
	NL-6525 AJ Nijmegen, the Netherlands

SPECIAL ACADEMIC DUTIES

Peer review	Physical Review Letters, Physical Review B, E	*since 1999*
	Journal of Physics A, C (IOP)	
	Europhysics Letters, European Journal of Physics, etc.	
Expert	NSF (National Science Foundation, USA)	*since 2006*
	EPSRC (Engineering and Physical Sciences Research Council, UK)	*since 2008*
	EPSRC College Member	*since 2013*
PhD external examinor	Fabio Santandrea (supervised by M. Jonson)	*June 2011*
	Ibtsam Riaz (supervised by A. Geim and K. Novoselov, University of Manchester, UK)	*Dec 2011*
	Chris Poole (supervised by V. Fal'ko, Lancaster University, UK)	*Feb 2012*
	Juha Voutilainen (supervised by T. Heikkilä, Aalto University, Finland)	*April 2012*

ADMINISTRATIVE DUTIES

Heriot-Watt University	University course timetabler in Physics	*2007-2012*
	Responsible for tutors in Physics	*2009-2012*
Radboud University	Responsible for research seminars & colloquia	*2013-*
	Research group management	

SUPERVISION

PhD student supervision

Ivan Ado, "Localization effects in topological magnets", Radboud University Nijmegen 2013-2017

Wolf-Rüdiger Hannes, "Quantum transport and non-unitary gauge invariance in graphene-based electronic systems", PhD, Heriot-Watt Univeristy, Edinburgh, 2013

Sebastian Gattenlöhner, "Quantum transport in disordered and strain-engineered graphene" PhD thesis submitted, Heriot-Watt Univeristy, Edinburgh, 2014

BSc and MSc supervision

Around 2-3 projects a year; currently:
Robert Sokolewicz (MSc)
Marijn Man (Radboud Honours BSc)
Ana Jekova (BSc)

SHORT-TERM VISITS & COLLABORATIONS

01/10/1995 – 30/10/1995	Collaboration within INTAS projects:
01/07/1996 – 31/07/1996	INTAS-94-2058 "Quantum chaos"
01/07/1997 – 31/07/1997	INTAS-97-1342 "Magnetotransport, localization, interactions, and chaotic scattering in low dimensional electron systems" Physics Department, University of Essen, Germany
01/11/2000 – 15/11/2000	visiting fellow, group of Prof. P.W. Brouwer Physics Department, Cornell University, Ithaka, USA
01/04/2003 – 01/06/2003	visiting fellow, group of Prof. I.L. Aleiner
01/09/2003 – 31/11/2003	Physics Department, Columbia University, NY, USA
01/04/2009 – 30/06/2009	guest scientist , group of Prof. A.D. Mirlin
01/04/2010 – 30/06/2010	Karlsruhe Institute for Nanotechnology and
20/05/2011 – 20/07/2011	DFG Center for Functional Nanostructures, Universität Karlsruhe, Germany
01/10/2013 – 31/10/2013	visiting scientist, group of Prof. W. Metzner Max-Planck-Institute for Solid State Research, Stuttgart, Germany
16/11/2004 – 30/11/2004	visiting researcher
02/01/2005 – 15/01/2005	group of Prof. C.W.J. Beenakker
15/03/2005 – 31/03/2005	Lorentz-Institute, Leiden, the Netherlands
02/05/2005 – 15/05/2005	
24/08/2005 – 09/09/2005	
27/02/2006 – 03/03/2006	
15/05/2006 – 26/05/2006	
27/09/2006 – 10/10/2006	
04/02/2007 – 17/02/2007	
12/04/2011 – 20/04/2011	

2007 – 2011	multiple short visits in the group of Prof. Dr. W. Belzig Universität Konstanz, Germany
2010 – 2011	multiple short visits in the group of Prof. Dr. B. Trauzettel Universität Würzburg, Germany

RESEARCH FUNDING

NWO FOM project grant PI "*From topological insulators to topological magnets*" (Nijmegen): 1 PhD position 2013-2017, 1 postdoc position 2014-2015;

EU MC-IRSES 2013-2017 "*Interactions in novel materials*" Coordinator of the research network (Nijmegen, Exeter, Karlsruhe, St. Petersburg);

Academic Research Collaboration (British Council & DAAD): collaboration with the group of Prof. Trauzettel (Universität Würzburg), 2010-2011;

Scottish Universities Physics Alliance: 1 PhD position, *2010-2014*;

Engineering and Physical Sciences Research Council (UK) through Condensed Matter Physics Doctoral Training Centre: 1 PhD position, *2009-2013*;

DFG Priority Program "Semiconductor Spintronics″ (together with Prof. Dr. W. Belzig): 1 postdoc position, *2007-2009*.

INTERVIEWS

Short-listed (2nd place) for the full-professor post (W3) at the University of Würzburg (12.01.2011)

Interview for the full-professor post (W3) at the University of Braunschweig (17.11.2010)

Interview for the full-professor post (W3) at the University of Saarland, Saarbrücken, Germany (02.11.2009)

RESEARCH TOPICS

- Graphene and topological insulators
- Transport and interactions in compensated metals and semiconductors
- Quantum kinetics and non-equilibrium phenomena in magnetic systems
- Disordered systems and Anderson localization
- Mesoscopic phenomena in solids
- Quantum dots, nanowires, and SNS junctions
- Quantum entanglement and majorana fermions in semiconductors
- Quantum chaos and propagation of waves in random media

TEACHING EXPERIENCE

Radboud University Nijmegen

- Master course "*Theory of Condensed Matter*", since 2013
- Undegraduate course "*Statistical Physics*", since 2014

Heriot-Watt University

- Lectures and Laboratory work "*Computational Physics*", 2008
- New Master course and tutorials "*Quantum Statistics*", since 2008
- New undergraduate course and tutorials "*Physical Mathematics*", since 2008
- New Master course and tutorials "*Condensed Matter Physics*", since 2009
- New Master course and tutorials "*Nano Physics*", since 2010 (for five universities)
- New Postgraduate course and tutorials on "*Disordered Systems*", since 2011 (for five universities)

University of Konstanz

- Tutorials in advanced quantum mechanics and electrodynamics, 2005–2006
- Seminar "*Quantum transport*", 2005–2006
- Seminar "*Theory of superconductivity*", 2006–2007
- Lectures and tutorials (with Prof. Dr. E. Scheer) "*Mesoscopic systems*", 2006–2007
- Lectures and tutorials (with Dr. M. Eschrig) "*Condensed-matter theory*", 2007

Participation in the supervision of PhD and Diploma students:

- K. J. H. van Bemmel, "*On Chaotic Wave Dynamics*", PhD, December 6, 2001, Leiden University, The Netherlands
- Markus Müller, "*Interaction corrections to the low dimensional Andreev reflection*", Diplom, June 2006, University of Konstanz
- Wolf-Rüdiger Hannes, "*Detection of spin entanglement in heterostructures*", Diplom, July 2008, University of Konstanz
- Sebastian Gattenlöhner, "*Effect of curvature on transport in graphene*", Diplom, September 2008, University of Konstanz
- Jan Hammer, *"Coherent transport under the influence of time-dependent fields",* PhD student, University of Konstanz

WORKSHOPS AND CONFERENCES

Invited talks:

- "Metal-insulator transition in graphene on boron-nitride"

Workshop on "Recent Progress and Perspectives in Scaling, Multifractality, Interactions, and Topological Effects Near Anderson Transitions" (Dresden, Germany, March 2014)

- "Giant magnetodrag in graphene"

Graphene Day (Eindhoven, the Netherlands, November 2013)

- "Coulomb drag in graphene"

Workshop on "Topology and Non-equilibrium in Low-Dimensional Electronic Systems" (Dresden, Germany, September 2013)

- "Unfolded scattering theory for disordered graphene"

International Symposium on "Electron Spectroscopy and Microscopy of Complex Systems" (St.Andrews, Scotland, August 2010)

- "Strong impurities in graphene"

"UK Workshop on Graphene and Graphite: Science and Technology" (Abington, Oxfordshire, July 2009)

- "Thermoelectric effects in mesoscopic Andreev interferometers"

Workshop "Unconventional proximity effects in novel materials" (WEH Seminar, Bad Honnef, Germany, October 2008)

- "Scattering approach to graphene"

Workshop "Mathematics and Physics of Anderson Localization: 50 Years After" (Isaak Newton Institute, Cambridge, UK, Septemer 2008)

- "Ballistic transport in graphene"

Plenary talk, APS March meeting (New Orleans, USA, March 2008)

- "Superconducting proximity effects in graphene"

Conference "Physics of nanoscale superconducting heterostructures" (Lorentz Center, Leiden, the Netherlands, July 2007)

- "Charge transport in graphene"

Symposium "Trends in Nanoscience 2007" (Kloster Irsee, Germany, February 2007)

- "Mesoscopic transport and noise in ballistic graphene"

Workshop "Mesoscopic Transport and Noise" (Island of Corfu, Greece, September 2006)

- "Random matrix theory of proximity effect in disordered wires"

Workshop "Coherent charge and spintransport on a nanoscale" (Chernogolovka, Moscow Region, Russia, June 2003).

- "Anderson localization anomaly near the band center"

Minevra meeting of young researches "Semiclassics, quantum chaos, and mesoscopics" (Max-Planck-Institute PKS, Dresden, Germany, January 2003).

- "Statistics of finite-time Lyapunov exponents in a random time-dependent potential"

Workshop "Mesoscopic Physics and Electron Interactions" (Trieste, Italy, July 2002)

- "Signature of wave localization in a time dependence of a reflected pulse"

European Network Meeting "Phase Coherent Dynamics of Hybrid Nanostructures" (Cargese, Corsica, May 2000)

Contributed:

- Symposium on quantum Hall effect and related topics (Max-Planck Institute for Solid State Physics, Stuttgart, Germany, June 2013)
- Graphene Week (Chemnitz, Germany, June 2013)
- FOM physics meeting (Veldhoven, the Netherlands, February 2013)
- Graphene Week (Delft, the Netherlands, June 2012)
- Workshop "Electronic Correlations and Disorder in Quantum Matter" (Karlsruhe, Germany, April 2012)
- UK-Japan workshop on "Graphene" (Lancaster University, February 2011)
- International Workshop "Graphene" (Benasque, Spain, July-August 2009)
- DPG-Tagung (Regensburg, Germany, March 2007)
- Workshop "Graphene" (Lorentz Center, Leiden, the Netherlands, February 2007)
- International workshop "Dynamics and Relaxation in Complex Quantum and Classical Systems and Nanostructures" (Max-Planck-Institute PKS, Dresden, Germany, August 2006)

- Advanced research workshop "Fundamentals of electronic nanosystems" (St.Petersburg, Russia, June 2005)
- Japan-Germany Colloquium "Semiconductor Physics and Technology" (Max-Planck-Institute PKS, Dresden, Germany, February 2005)
- Workshop "Quantum Transport and Correlations in Mesoscopic Systems and QHE" (Max-Planck-Institute PKS, Dresden, Germany, January 2003)
- Enrico Fermi School "Quantum Phenomena in Mesoscopic Physics" (Varenna, Italy, July 2002)
- 7th Gentner Symposium "Quantum Chaos" (Ein Gedi, Israel, February 2001)
- FOM Winter meeting (Veldhoven, the Netherlands, December 2000)
- WE-Heraeus-Seminar "Interacting Electrons in Nanostructures" (Bad Honnef, Germany, June 2000)
- Adriatico Research Conference "Non-Hermiticity and Disorder" (Trieste, Italy, August 1999)
- LXIX International Summer School on "Topological aspects of low dimensional systems" (Les Houches, France, August 1998)

SEMINARS & COLLOQUIA

- 29/11/2013 "Giant magnetodrag in graphene ", Groningen University, Netherlands
- 9/11/2013 "Giant magnetodrag in graphene", Max-Planck Institute FKP, Stuttgart, Germany
- 08/11/2012 "Coulomb drag in graphene", Bar-Ilan University, Israel
- 14/02/2012 "Coulomb drag in graphene bi-layers: understanding experimental data", Lancaster University, UK
- 09/02/2012 "Coulomb drag in graphene bi-layers", University of Birmingham, UK
- 19/06/2011 "Unfolded scattering theory for disordered graphene: from ballistic to diffusion and criticality", Radboud University Nijmegen, the Netherlands
- 08/06/2011 "Unfolded scattering theory for disordered graphene: from ballistic to diffusion and criticality", Chalmers University, Gothenburg, Sweden
- 13/04/2011 "Unfolded scattering theory for disordered graphene: from ballistic to diffusion and criticality", Leiden University, the Netherlands
- 12/01/2011 "Transport theory for graphene: from ballistic to diffusion and criticality", University of Würzburg, Germany
- 17/11/2010 "Nobles Graphen: eine Erfolgsgeschichte von Dirac-Elektronen in planarem Kohlenstoff", University of Braunschweig, Germany
- 28/06/2010 "Transport theory for graphene: from ballistic to diffusion and criticality", Heidelberg University, Germany
- 17/06/2010 "Transport in graphene with resonant scatterers: from ballistic to diffusion and criticality", Karlsruhe Institute of Technology, Karlsruhe, Germany
- 5/05/2010 " Exact theory for disordered graphene: the major role of resonant scatterers", Free University, Berlin, Germany
- 12/01/2010 "Resonant scattering in graphene with localized impurities", University of Würzburg, Germany
- 2/12/2009 "Dirac-Elektronen in Graphen: überraschende Physik in planarem Kohlenstoff", University of Saarland, Saarbrücken, Germany

- 8/05/2009 "Electrostatic confinement of electrons in an integrable graphene quantum dot", University of Karlsruhe, Germany
- 6/03/2009 "Ballistic charge transport in graphene", University of Paris-Sud, Orsay, France
- 12/02/2009 "Scattering approach to graphene", University of Nottingham, UK
- 11-12/12/2007 "Introduction to graphene", University of Innsbruck, Austria
- 23/11/2007 "Proximity effects in graphene", University of Lancaster, UK
- 31/01/2007 "Charge transport in graphene", Paul Scherrer Institute, Villigen, Switzerland
- 22/01/2007 "Scattering approach to the charge transport in graphene", University of Karlsruhe, Germany
- 07/06/2006 "Non-universality of Anderson localization in correlated disorder" LPTMS Orsay, Paris, France
- 11/04/2005 "Two mechanisms of thermopower enhancement in mesoscopic NS proximity effect", University of Karlsruhe, Germany
- 30/11/2003 "Band-centre anomaly in Anderson localization", Cornell University, USA
- 21/01/2002 "Scattering approach to the fluctuations of the local density of states in disordered wires", University of Karlsruhe, Germany

REFERENCES

- Prof. Dr. C. W. J. Beenakker (co-author)
  Director of Instituut-Lorentz for Theoretical Physics
  Niels Bohrweg 2, Leiden, NL-2333 CA, The Netherlands
  Tel: +31-71-527-5532
  Fax: +31-71-527-5511
  E-mail: beenakker@lorentz.leidenuniv.nl

- Prof. Dr. P. W. Brouwer (co-author)
  Director of Dahlem Center for Complex Quantum Systems
  Freie Universität Berlin, Arnimallee 14, D-14195 Berlin, Germany
  Tel: +49-30-838-53039
  Fax: +49-30-838-55567
  E-mail: brouwer@physik.fu-berlin.de

- Prof. Y. V. Fyodorov (PhD thesis adviser)
  School of Mathematical Sciences, Queen Mary University of London
  Mile End Road, London E1 4NS, UK
  Tel: +44-20-7882-5452
  Fax: +44-20-8981-9587
  E-mail: y.fyodorov@qmul.ac.uk

- Prof. Dr. M. Katsnelson (co-author, head of the department)
  Theory of Condensed Matter, Institute for Molecules and Materials
  Radboud University of Nijmegen
  Heijendaalseweg 135, 6525AJ Nijmegen, the Netherlands
  Tel. +31-24-365-2995
  Fax +31-24-365-2120
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- Prof. Dr. A. D. Mirlin (co-author)
  Institut für Theorie der Kondensierten Materie, Universität Karlsruhe,
  Postfach 6980, D-76128 Karlsruhe, Germany
  Tel: +49-721-608-3368
  Fax: +49-721-608-7779
  E-mail: mirlin@tkm.uni-karlsruhe.de

- Prof. Dr. B. Trauzettel (co-author)
  Institut für Theoretische Physik und Astrophysik
  Universität Würzburg
  Tel: +49-931-31-83638
  Fax:+49-931-31-85141
  E-mail: trauzettel@physik.uni-wuerzburg.de

LIST OF PUBLICATIONS

[1] *Metal-insulator transition in graphene on boron nitride,*
M. Titov and M. Katsnelson, Phys. Rev. Lett. **113**, 096801 (2014)

[2] *Quantum Hall criticality and localization in graphene with short-range impurities at the Dirac point,*
S. Gattenloehner, W.-R. Hannes, P. M. Ostrovsky, I. V. Gornyi, A. D. Mirlin, M. Titov, Phys. Rev. Lett. **112**, 026802 (2014)

[3] *Giant magneto-drag in graphene at charge neutrality,*
M. Titov, R. V. Gorbachev, B. N. Narozhny, T. Tudorovskiy, M. Schuett, P. M. Ostrovsky, I. V. Gornyi, A. D. Mirlin, M. I. Katsnelson, K. S. Novoselov, A. K. Geim, and L. A. Ponomarenko, Phys. Rev. Lett. **111**, 166601 (2013)

[4] *Coulomb drag in graphene near the Dirac point,*
M. Schütt, P. M. Ostrovsky, M. Titov, I. V. Gornyi, B. N. Narozhny, and A. D. Mirlin, Phys. Rev. Lett. **110,** 026601 (2013)

[5] *Coulomb drag in graphene: perturbation theory,*
B. N. Narozhny, M. Titov, I. V. Gornyi, and P. M. Ostrovsky, Phys. Rev. B **85**, 195421 (2012)

[6] *From Anderson to anomalous localization in cold atomic gases with effective spin-orbit coupling,* M. J. Edmonds, J. Otterbach, R. G. Unanyan, M. Fleischhauer, M. Titov, P. Ohberg, New J. Phys. **14**, 073056 (2012)

[7] *Electron-hole asymmetry in two-terminal graphene devices,*
W.-R. Hannes, M. Jonson, and M. Titov, Phys. Rev. B **84**, 045414 (2011)

[8] *Color-dependent conductance of graphene with adatoms,*
J. Schelter, P. M. Ostrovsky, I. V. Gornyi, B. Trauzettel, and M. Titov, Phys. Rev. Lett. **106,** 166806 (2011)

[9] *Dirac-Kronig-Penney model for strain-engineered graphene,*
S. Gattenlöhner, W. Belzig, and M. Titov, Phys. Rev. B **82,** 155417 (2010)

[10] *Diffusion and criticality in undoped graphene with resonant scatterers,*
P. M. Ostrovsky, M. Titov, S. Bera, I. V. Gornyi, and A. D. Mirlin, Phys. Rev. Lett. **105,** 266803 (2010)

[11] *Metallic proximity effect in ballistic graphene with resonant scatterers,*
M. Titov, P. M. Ostrovsky, and I. V. Gornyi, Semicond. Sci. Technol. **25**, 034007 (2010)

[12] *Charge transport in graphene with resonant scatterers,*
M. Titov, P. M. Ostrovsky, I. V. Gornyi, A. Schuessler, and A. D. Mirlin, Phys. Rev. Lett. **104,** 076802 (2010)

[13] *Ballistic charge transport in chiral-symmetric few-layer graphene,*
W.-R. Hannes and M. Titov, Europhys. Lett. **89**, 47007 (2010)

[14] *Electrostatic confinement of electrons in an integrable graphene quantum dot,*
J. H. Bardarson, M. Titov, and P. W. Brouwer, Phys. Rev. Lett. **102**, 226803 (2009)

[15] *Thermopower oscillations in mesoscopic Andreev interferometers,*
M. Titov, Phys. Rev. B **78**, 224521 (2008)

[16] *Finite-temperature Bell test for quasiparticle entanglement in the Fermi sea,*
W.-R. Hannes and M. Titov, Phys. Rev. B **77**, 115323 (2008)

[17] *Reentrance effect in a graphene n-p-n junction coupled to a superconductor,*
A. Ossipov, M. Titov, and C. W. J. Beenakker, Phys. Rev. B **75**, 241401 (2007)

[18] *Impurity-assisted tunneling in graphene,*
M. Titov, Europhys. Lett. **79**, 17004 (2007)

[19] *Excitation gap of a graphene channel with superconducting boundaries,*
M. Titov, A. Ossipov and C. W. J. Beenakker, Phys. Rev. B **75**, 045417 (2007)

[20] *Interaction-induced renormalization of Andreev reflection,*
M. Titov, M. Müller, and W. Belzig, Phys. Rev. Lett. **97**, 237006 (2006)

[21] *Josephson effect in ballistic graphene,*
M. Titov and C. W. J. Beenakker, Phys. Rev. B **74**, 041401(R) (2006)

[22] *How spin-orbit interaction can cause electronic shot noise,*
A. Ossipov, J. H. Bardarson, C. W. J. Beenakker, J. Tworzydlo, M. Titov, Europhys. Lett. **76**, 115 (2006)

[23] *Quantum-limited shot noise in graphene,*
J. Tworzydlo, B. Trauzettel, M. Titov, A. Rycerz, C. W. J. Beenakker, Phys. Rev. Lett. **96**, 246802 (2006)

[24] *Nonuniversality of Anderson localization in short-range correlated disorder,*
M. Titov and H. Schomerus, Phys. Rev. Lett. **95**, 126602 (2005)

[25] *Transfer of entanglement from electrons to photons by optical selection rules,*
M. Titov, B. Trauzettel, B. Michaelis, C. W. J. Beenakker, New Journal of Physics **7**, 186 (2005)

[26] *Optimal spin-entangled electron-hole pair pump,*
C. W. J. Beenakker, M. Titov, and B. Trauzettel, Phys. Rev. Lett. **94**, 186804 (2005)

[27] *Spin filters with Fano dots,*
M. Torio, K. Hallberg, S. Flach, A. Miroshnichenko, and M. Titov, Eur. Phys. B **37**, 399 (2004)

[28] *Anomalous Wave Function Statistics on a One-Dimensional Lattice with Power-Law Disorder,*
M. Titov and H. Schomerus, Phys. Rev. Lett. **91**, 176601 (2003)

[29] *Short-distance wavefunction statistics in one-dimensional Anderson localization,*
H. Schomerus and M. Titov, Eur. Phys. J. B **35**, 421 (2003)

[30] *Band-center anomaly of the conductance distribution in one-dimensional Anderson localization,*
H. Schomerus and M. Titov, Phys. Rev. B **67**, 100201(R) (2003)

[31] *Random matrix theory of proximity effect in disordered wires,*
M. Titov and H. Schomerus, Phys. Rev. B **67**, 024410 (2003)

[32] [31] *Statistics of finite-time Lyapunov exponents in a random time-dependent potential,*
H. Schomerus and M. Titov, Phys. Rev. E **66**, 066207 (2002)

[33] *Dynamic effect of phase conjugation on wave localization,*
K. J. H. van Bemmel, M. Titov, and C.W.J. Beenakker, Phys. Rev. B **65**, 174203 (2002)

[34] *Microscopic versus mesoscopic local density of states in one-dimensional localization,*
H. Schomerus, M. Titov, P.W. Brouwer, and C. W. J. Beenakker, Phys. Rev. B **65**, 121101(R) (2002)

[35] *Negative superfluid density: can mesoscopic fluctuations reverse the supercurrent through a disordered Josephson junction,*
M. Titov, Ph. Jacquod, and C. W. J. Beenakker, Phys. Rev. B **65**, 012504 (2002)

[36] *Andreev levels in a single-channel conductor,*
M. Titov, N. A. Mortensen, H. Schomerus, and C. W. J. Beenakker, Phys. Rev. B **64**, 134206 (2001)

[37] *Fokker-Planck equations and density of states in disordered quantum wires,*
M. Titov, P. W. Brouwer, A. Furusaki, and C. Mudry, Phys. Rev. B **63**, 235318 (2001)

[38] *Signature of wave localization in the time dependence of a reflected pulse,*
M. Titov and C. W. J. Beenakker, Phys. Rev. Lett. **85**, 3388 (2000)

[39] *Time delay correlations and resonances in 1D disordered systems,*
M. Titov and Y. V. Fyodorov, Phys. Rev. B **61**, R2444 (2000)

[40] *S-matrix poles for chaotic quantum systems as eigenvalues of complex symmetric random matrices: from isolated to overlapping resonances,*
H. -J. Sommers, Y. V. Fyodorov, and M. Titov, J. Phys. A **32**, L77 (1999)

[41] *Statistics of S-matrix poles for chaotic systems with broken time reversal invariance: a conjecture,*
Y. V. Fyodorov, M. Titov, and H.-J. Sommers, Phys. Rev. E. **58**, 1195 (1998)

[42] *Log-normal distribution of level curvatures in the localized regime: analytical verification,*
M. Titov, D. Braun, and Y. V. Fyodorov, J. Phys. A **30**, L339 (1997)

[43] *Quasiparticle damping in two-dimensional superconductors with unconventional pairing,*
M. L. Titov, A. G. Yashenkin, and D. N. Aristov, Phys. Rev. B **52**, 10626 (1995)

SHORT STATEMENT

At the moment I am leading a research group "Quantum Transport", which is a part of the Theory of Condensed Matter Group in the Institute of Molecules and Materials at Radboud University Nijmegen. Currently the group consists of Alireza Quaimzadeh (FOM postdoc), Ivan Ado (FOM PhD student), Robert Sokolewicz (MSc student), Marijn Man (Radboud Honours BSc student), Ana Jekova (BSc student).

I act as the Principal Investigator on the project “From topological insulators to topological magnets” (FOM Projectruimte, 400 kEuro). I am also the Coordinator of the EU MC-IRSES Network “*Interactions in novel materials*” (114 kEuro, 2012-2017) which unites world-leading researchers from Nijmegen (NL), Exeter (UK), Karlsruhe (GER), and St. Petersburg (RUS). Together with Prof. M. Katsnelson I collaborate with the Nobel Prize winners Andre Geim and Konstatin Novoselov on the physics of graphene.

My current research is mostly related to different aspects of semiconductor and metal physics in the vicinity of electron-hole compensation with the emphasis on interaction phenomena, transport, disorder, and non-equilibrium effects. I am also pursuing projects in spintronics, localization physics, and random matrix theory.

Since 2006 most of my highly cited publications ([23] 450 citations, [21] 150 citations, [18] 50 citations) are devoted to graphene. My recent achievements include: theory of metal insulator transition in graphene on boron-nitride [1], new semi-analytic approach to disorder in graphene [2], theory of giant magnetodrag [3]. I also collaborate with experimental groups of S. Wiedmann and U. Zeitler (Nijmegen) on the physics of topological insulators. We are mostly interested in the origin of robust linear magnetoresistance in HgTe/CdTe heterostructures. A number of results obtained in Niimegen are currently being prepared for publicaiton.