

| | <u>Office</u> | <u>Private</u> |
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| Birth date | 24.09.1970, Volgograd, Russia. |
| Nationality | Russian and Italian |
| Languages | German (spoken), English (fluent), Russian (native), Italian (basics). |

Education

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| 08.1987–06.1993 | Undergraduate student, Moscow Institute of Physics and Technology, Moscow, Russia. Obtained M.Sc. degree in Physics with honor (<i>cum laude</i>). The title of the thesis: “A Josephson junction sampler”, supervisor: Dr. S. Kaplunenko. |
| 09.1993–02.1997 | Graduate (Ph.D.) student, Moscow Institute of Physics and Technology, Moscow, Russia. Obtained Ph.D. degree. Title of the thesis: “Coupled long Josephson junctions,” supervisors: Prof. A. V. Ustinov and Prof. V. K. Koshelets. |
| 23.01.2013 | Habilitation |

Employment

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| 11.2003–today | Postdoctoral research fellow/assistant, University of Tübingen, Germany. |
| 11.2002–10.2003 | Postdoctoral research fellow, University of Karlsruhe, Germany. |
| 03.2002–10.2002 | Postdoctoral research fellow, University of Tübingen, Germany. |
| 03.2001–12.2001 | Senior scientist, Oxxel Oxide Electronics Technology GmbH, Bremen, Germany. |
| 01.1998–02.2001 | Postdoctoral research fellow, Research Center Jülich, Jülich, Germany. |
| 09.1992–12.1997 | Junior researcher, Institute of Radioengineering and Electronics, Moscow, Russia. |

Visiting positions

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| 07.1997–08.1997 | guest researcher, University of Erlangen-Nuremberg, Erlangen, Germany. |
| 01.1996–04.1997 | visiting Ph.D. student, Research Center Jülich, Jülich, Germany. |
| 09.1995–12.1995 | guest researcher, Research Center Jülich, Jülich, Germany. |
| 05.1995–07.1995 | guest researcher, German Institute of Standards (PTB), Braunschweig, Germany. |
| 02.1995–05.1995 | guest researcher, Research Center Jülich, Jülich, Germany. |
| 09.1994–12.1994 | guest researcher, Research Center Jülich, Jülich, Germany. |
| 09.1993–12.1993 | guest researcher, Chalmers University of Technology, Gothenburg, Sweden. |

Scientific qualification and experience

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| Main | Experimental <i>solid state physics, superconductivity, Josephson effect, non-linear physics (solitons, chaotic and stochastic systems, ratchets), tunable band gap materials.</i> |
| Simulation | Simulation of dynamics of the long Josephson junctions (STKJJ); simulation of 3D magnetization (static domains, domain wall motion) in ferromagnetic nanostructures, microscopic simulations of the transport in heterostructures e.g. SIFS. |

Other Superconducting digital circuits based on Josephson Junctions, Rapid Single Flux Quantum logic (topic of Diploma thesis); **GoldExI** data acquisition system for investigation of Josephson devices (used in several labs in Europe and USA); modern thin film technology and thin film analytics: MBE, RHEED, XRD, AFM, lithography.

Scientific interests

Nano structures Transport in nanostructures such as Superconductor-X-Superconductor, where X can be 0D or 1D conductor, e.g. a single molecule, carbon/semiconducting nanotube, graphene sheet or quantum dot. Realization of π or φ Josephson junctions (phase batteries) in such systems.

Macroscopic Quantum effects Macroscopic Quantum effects in micro- and nano-scale solid state systems, especially based on Josephson junctions, qubits, quantum transport.

Fractional quanta Fractional Josephson vortices and 0, π , φ and 0- π Josephson junctions. More generally, non-linear solid state systems, solitons, transport.

Ratchets Classical and quantum ratchets, transport in chaotic and stochastic systems.

Photonic crystals Tunable band gap materials, plasmonic crystals based on fractional vortices.

Project leader

2002–2003 Strukturfond University of Tübingen “Fluxon trapping and mapping of the fluxon potential in long Josephson junctions” (~ 30 k€/1 year).

2004–2006 DFG Project GO-1106/1 “Investigation of semifluxons in long Josephson 0- π -junctions” (~ 145 k€/2 years).

2005–2007 Eliteförderprogramm Landesstiftung Baden-Württemberg, “Investigation of Josephson vortices carrying non-integer number of flux quanta” (~ 65 k€/2 years).

2005-2013 Leader of the project “Fractional Josephson vortices in the quantum limit” within SFB/TRR 21 (~ 800 k€ in 2005–2009 and ~ 550 k€ in 2009–2013).

2009-2011 Leader of the project “Semifluxons in ferromagnetic 0- π Josephson junctions” (~ 200 k€ in 2009–2011).

2012-2013 Invited leader of the Russian project “Development and diagnostics of plasmonic christsals based on Josephson junctions with nano-injectors” (~ 67 k€in 2012–2013).

Honors and Awards

University M.Sc. degree *cum laude*

2004 4th position in the list of best young Russian physicists in 2004 at<http://www.pereplet.ru>

2005 Elite young scientist of Baden-Württemberg (Landesstiftung award).

Service to scientific community

Referee Physical Review (B,E,Lett.); Europhysics Letters, Physics Letters A, Physica C.

Hobby

Mountains downhill skiing, (winter-)hiking, via ferrata

Sport table tennis, badminton, bicycle tours

Tech ray tracing, digital photography, \LaTeX