

CIRRICULUM VITAE

Personal data

Date and place of birth	March 12, 1981, Gorzów Wlkp. , Poland
Citizenship	Polish
E-mail	Tomasz.Sowinski@ifpan.edu.pl
Corresponding address	Institute of Physics of the Polish Academy of Sciences Al. Lotników 32/46, 02-668 Warsaw, Poland

Education and degrees

2008	Ph. D., Faculty of Physics, University of Warsaw <i>"Interaction of the two-level systems with the quantized electromagnetic field"</i> Thesis prepared in the Center for Theoretical Physics PAS Supervisor: prof. Iwo Białynicki-Birula
2005	M. Sc., Faculty of Physics, University of Warsaw Graduated with honours <i>"Complete classical and quantum description of motion in the rotating harmonic trap"</i> Supervisor: prof. Iwo Białynicki-Birula
2000 - 2005	student at the Faculty of Physics, University of Warsaw

Scientific experience

2011	Visiting Scientist The Institute of Photonic Sciences, Barcelona
2010 -	Assistant professor Institute of Physics of the Polish Academy of Sciences
2009 -	Assistant professor Faculty of Biology and Environmental Sciences, Cardinal Stefan Wyszyński University
2005 - 2009	Assistant Center for Theoretical Physics of the Polish Academy of Sciences
2003 - 2005	Laboratory technician for informatics Center for Theoretical Physics of the Polish Academy of Sciences

Scientific grants

2010 -	Researcher in „NAME-QUAM : Nanodesigning of atomic and molecular quantum matter”, European Union Project funded under: 7th FWP led in Poland by prof. Mariusz Gajda (Institute of Physics PAS)
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- 2008 - 2010 Researcher in "*Quantum electrodynamics of qubits and qudits*",
grant funded by Polish Ministry of Science and Education
led by prof. Iwo Białynicki-Birula (Center for Theoretical Physics PAS)
- 2003 - 2007 Researcher in "*Quantum informatics and engineering*"
grant ordered and funded by Polish Ministry of Science and Education
led by Dr Lech Mankiewicz (Center for Theoretical Physics PAS)
- 2004 - 2006 Researcher in "*Electromagnetic phenomena in rotating and accelerated systems*"
grant funded by Polish Ministry of Science and Education
led by prof. Iwo Białynicki-Birula (Center for Theoretical Physics PAS)

Publications

1. J. Pietraszewicz, T. Sowiński, M. Brewczyk, J. Zakrzewski, M. Lewenstein, M. Gajda
"Two component Bose-Hubbard model with higher angular momentum states"
ArXiv:1104.2512 (submitted to Phys. Rev. Lett.)
2. T. Świśtocki, T. Sowiński, M. Brewczyk, M. Gajda
*"Creation of topological states of a Bose-Einstein condensate in a square plaquette
of four optical traps"*
Phys. Rev. A **84**, 023625 (2011)
3. T. Świśtocki, T. Sowiński, J. Pietraszewicz, M. Brewczyk, M. Lewenstein, J. Zakrzewski, M. Gajda
"Tunable dipolar resonances and Einstein-de Haas effect in a 87Rb-atom condensate"
Phys. Rev. A **83**, 063617 (2011)
4. T. Sowiński, M. Brewczyk, M. Gajda, K. Rzążewski
"Dynamics and decoherence of two cold bosons in a one-dimensional harmonic trap"
Phys. Rev. A **82**, 053631 (2010)
5. T. Sowiński
"Two-level atom at finite temperature"
Acta Phys. Polon. A **116**, 994 (2009)
6. I. Białynicki-Birula, T. Sowiński
"Quantum electrodynamics of qubits"
Phys. Rev. A **76**, 062106 (2007)
7. T. Sowiński
"Wave functions of linear systems"
Acta Phys. Polon. B **38**, 2173 (2007)
8. I. Białynicki-Birula, T. Sowiński
"Gravity-induced resonances in a rotating trap"
Phys. Rev. A **71**, 043610 (2005)
9. T. Sowiński, I. Białynicki-Birula
"Harmonic oscillator in a rotating trap: Complete solution in 3D"
arXiv:quant-ph/0409070 (not published)

10. I. Białynicki-Birula, T. Sowiński

"Solutions of the logarithmic Schrödinger equation in rotating harmonic trap"

Nonlinear Waves: Classical and Quantum Aspects

F. Kh. Abdullaev and V. V. Konotop (eds.), Kluwer, Amsterdam, 2004, p. 99

Conference talks

1. "Density-dependent processes of dipolar molecules in an optical lattice"
Quantum Technologies Conference II, Kraków 30.08.2011 – 4.09.2011 (invited talk)
2. "Exact dynamics and decoherence of two cold bosons in a harmonic trap"
Quantum Technologies Conference, Toruń 29.08.2010 – 3.09.2010 (invited talk)

Conference posters

1. T. Sowiński, M. Brewczyk, M. Gajda, K. Rzążewski:
"Dynamics and decoherence of two cold bosons in a 1D harmonic trap"
 - Conference *"Many-Body Quantum Dynamics in Closed Systems"*, Barcelona, Spain (2011)
 - Conference *"Bose-Einstein Condensation 2011"*, Sant Feliu de Guixols, Spain (2011)
2. T. Sowiński: *"Two-level atom at finite temperature"*
 - Conference *"Quantum Optics VII"*, Zakopane, Poland (2009)
3. I. Białynicki-Birula, T. Sowiński: *"Quantum Electrodynamics of Qubits"*
 - Conference *"Foundations of Quantum Physics"*, Bad Honnef, Germany (2008)
 - Conference *"Control, Constraints and Quanta"*, Będlewo, Poland (2007)
 - Conference *"Photons, Atoms, and Qubits (PAQ07)"*, London, UK (2007)
4. T. Sowiński: *"Classical-quantum correspondence in a rotating harmonic trap"*
 - Workshop *"Cold atoms"*, Toruń, Poland (2006)
5. I. Białynicki-Birula, T. Sowiński: *"Gravity-induced resonances in the rotating harmonic trap"*
 - Conference *"Quantum Optics VI"*, Krynica, Poland (2005)
6. I. Białynicki-Birula, T. Sowiński: *"Nonlinear Schrödinger equation in a rotating harmonic trap"*
 - Workshop *"Optyka i Informatyka Kwantowa"*, Toruń (2004)

Science popularization

1. Over fifty articles about physics published in the oldest polish educational magazine *"Young Technician"* (pol. *"Młody Technik"*) and in *"Characters"* (pol. *"Charaktery"*)
2. Four educational movies published electronically in *"Young Technician"* (pol. *"Młody Technik"*)
3. A. Trętowska, Ł. Nowotko, W. Śliwa, G. Wrochna, T. Sowiński, P. Fita
"CCD Observatory in school. Guide for students, teachers and parents"
Electronic publication funded by European Commission in program *"Hands-On Universe"* (2005)
4. Over twenty lectures for the general public on physics
5. Permanent lectures and workshops for children at *"University of Children"*

Awards and scholarships

2009	Best lecture of the XIII Science Festival in Warsaw
2008	<i>"Master of science popularization - Golden Mind 2008"</i> Title awarded by the President of the Polish Academy of Sciences
2004/05	Ministry of National Education Scholarship
2005, 2009, 2010	Nominated for the title <i>"Popularizer of Science"</i> awarded by the Polish Press Agency and the Ministry of Science and Higher Education