

# Curriculum Vitae

## Personal information

Name Igor Lesanovsky  
Date of birth April 1<sup>st</sup> 1979  
Place of Birth Grevesmühlen, Germany  
Citizenship German  
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## Education summary

2007 PostDoc at the Institute for Theoretical Physics at the University of Innsbruck/Austria in the group of Prof. Peter Zoller  
Fields of research: dipolar matter, Rydberg atoms, quantum gases

2006 Marie Curie PostDoc at the Institute of Electronic Structure and Laser in Iraklio/Greece in the group of Dr. Wolf von Klitzing  
Fields of Research: Bose-Einstein Condensation, matter waves, quantum optics

2003 – 2006 Ph.D. student at the Department of Physics and Astronomy at the University of Heidelberg, Germany in the groups of Prof. Jörg Schmiedmayer and Prof. Peter Schmelcher  
Degree: Doctor rerum naturalis (summa cum laude)  
Ph.D. thesis: *Quantum dynamics of ultracold atoms in inhomogeneous magnetic fields – from ground state atoms to Rydberg atoms*

2000 – 2003 Physics student at the University of Heidelberg, Germany  
Degree: Diploma (with distinction)  
Diploma thesis: *Rydberg atoms in magnetic quadrupole traps*

1998 – 2000 Physics student at the University of Rostock, Germany  
Degree: Intermediate diploma (very good)

## Scholarships

10/2003 – 09/2005 Recipient of a scholarship from the Land Baden-Württemberg according to the Landesgraduiertenförderungsgesetz

## Scientific visit

07/2005 – 08/2005 Visiting scientist at ITAMP, Harvard University Physics Department, Cambridge, USA

## Languages

German (mother tongue), English (fluent), French (good knowledge), Russian (basic knowledge)

## List of publications

### 2007

1. S. Hofferberth, I. Lesanovsky, B. Fischer, T. Schumm and J. Schmiedmayer, *Non-equilibrium coherence dynamics in one-dimensional Bose gases*, arXiv:0706.2259, to appear in Nature
2. M. Mayle, B. Hezel, I. Lesanovsky and P. Schmelcher, *One-dimensional Rydberg gas in a magneto-electric trap*, arXiv:0704.2299, to appear in Physical Review Letters
3. S. Saeidian, I. Lesanovsky and P. Schmelcher, *Atomic hyperfine resonances in a magnetic quadrupole field*, to appear in Physical Review A
4. S. Middelkamp, I. Lesanovsky and P. Schmelcher, *Spectral properties of a Rydberg atom immersed in a Bose-Einstein condensate*, arXiv:cond-mat/0703443, to appear in Physical Review A
5. I. Lesanovsky and W. v. Klitzing, *Time-Averaged Adiabatic Potentials: Versatile Matter-Wave Guides and Atom Traps*, arXiv:cond-mat/0612213, to appear in Physical Review Letters
6. S. Hofferberth, B. Fischer, T. Schumm, J. Schmiedmayer and I. Lesanovsky, *Ultracold atoms in radio-frequency dressed potentials beyond the rotating-wave approximation*, Physical Review A **76**, 013401 (2007)
7. I. Lesanovsky and W. von Klitzing, *Spontaneous emergence of angular momentum Josephson oscillations in coupled annular Bose-Einstein Condensates*, Physical Review Letters **98**, 050401 (2007)
8. U. Schmidt, I. Lesanovsky and P. Schmelcher, *Ultracold Rydberg atoms in a magneto-electric trap*, Journal of Physics B **40**, 1003-1018 (2007)

### 2006

9. I. Lesanovsky, P. Schmelcher and H. Sadeghpour, *Ultra long-range Rydberg molecules exposed to a magnetic field*, Journal of Physics B **39**, L69 (2006)
10. I. Lesanovsky, T. Schumm, S. Hofferberth, L. M. Andersson, P. Krüger and J. Schmiedmayer, *Adiabatic radio frequency potentials for the coherent manipulation of matter waves*, Physical Review A **73**, 033619 (2006)
11. S. Wildermuth, S. Hofferberth, I. Lesanovsky, S. Groth, I. Bar-Joseph, P. Krüger and J. Schmiedmayer, *Sensing electric and magnetic fields with Bose-Einstein Condensates*, Applied Physics Letters **88**, 264103 (2006)
12. J. Bill, M.-I. Trappe, I. Lesanovsky and P. Schmelcher, *Resonant quantum dynamics of neutral spin-1 particles in a magnetic guide*, Physical Review A **73**, 053609 (2006)

13. T. Schumm, P. Krüger, S. Hofferberth, I. Lesanovsky, S. Wildermuth, S. Groth, I. Bar-Joseph, L. M. Andersson and J. Schmiedmayer, *A double well interferometer on an atom chip*, *Quantum Information Processing*, DOI: 10.1007/s11128-006-0033-2 (2006)
14. I. Lesanovsky, S. Hofferberth, J. Schmiedmayer and P. Schmelcher, *Manipulation of ultracold atoms in dressed adiabatic radio-frequency potentials*, *Physical Review A* **74**, 033619 (2006)
15. S. Hofferberth, I. Lesanovsky, B. Fischer, J. Verdu and J. Schmiedmayer, *Radiofrequency-dressed-state potentials for neutral atoms*, *Nature Physics* **2**, 710-716 (2006)
16. S. Saeidian, I. Lesanovsky and P. Schmelcher, *Negative energy resonances of Bosons in a magnetic quadrupole trap*, *Physical Review A* **74**, 065402 (2006)
17. B. Hezel, I. Lesanovsky and P. Schmelcher, *Controlling ultracold Rydberg atoms in the quantum regime*, *Physical Review Letters* **97**, 223001 (2006)

## 2005

18. I. Lesanovsky and P. Schmelcher, *Spectral properties and lifetimes of neutral fermions and bosons in a magnetic quadrupole trap*, *Physical Review A* **71**, 032510 (2005)
19. I. Lesanovsky, J. Schmiedmayer and P. Schmelcher, *Rydberg Atoms in a Magnetic Quadrupole Field*, *Journal of Physics B* **38**, S151–S170 (2005)
20. H. Bock, I. Lesanovsky and P. Schmelcher, *Neutral two-body systems in inhomogeneous magnetic fields: the quadrupole configuration*, *Journal of Physics B* **38**, 893–906 (2005)
21. S. Wildermuth, S. Hofferberth, I. Lesanovsky, E. Haller, L.M. Andersson, S. Groth, I. Bar-Joseph, P. Krüger and J. Schmiedmayer, *Microscopic magnetic-field imaging*, *Nature* **435**, 440 (2005)
22. I. Lesanovsky and P. Schmelcher, *Selected aspects of the quantum dynamics and electronic structure of atoms in magnetic microtraps*, *The European Physical Journal D* **35**, 31 (2005)
23. I. Lesanovsky and P. Schmelcher, *Magnetic Trapping of Ultracold Rydberg Atoms*, *Physical Review Letters* **95**, 053001 (2005)
24. I. Lesanovsky and P. Schmelcher, *Quantum states of ultracold electronically excited atoms in a magnetic quadrupole trap*, *Physical Review A* **72**, 053410 (2005)

## 2004

25. I. Lesanovsky, J. Schmiedmayer and P. Schmelcher *Rydberg Atoms in Magnetic Quadrupole Traps*, *Europhysics Letters* **66**, 4,478 (2004)
26. I. Lesanovsky, J. Schmiedmayer and P. Schmelcher, *Electronic Structure of Atoms in Magnetic Quadrupole Traps*, *Physical Review A* **69**, 053405 (2004)

27. I. Lesanovsky, J. Schmiedmayer and P. Schmelcher, *Rydberg Atoms in a Magnetic Guide*, Physical Review A **70**, 043409 (2004)
28. I. Lesanovsky und P. Schmelcher, *Spectral properties and lifetimes of neutral spin-1/2 fermions in a magnetic guide*, Physical Review A **70**, 063604 (2004)