

# CURRICULUM VITAE AND PUBLICATIONS

## PART 1

1a. Personal details				
<b>Full name</b>	<i>Title</i>	<i>First name</i>	<i>Second name(s)</i>	<i>Family name</i>
	Dr.	Oleksandr		Fialko
<b>Present position</b>	Postdoctoral fellow			
<b>Organisation/Employer</b>	Massey University			
<b>Contact Address</b>	New Zealand Institute for Advanced Study			
	Massey University, Private Bag 102904, North Shore			
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<b>Personal website (if applicable)</b>	<a href="http://ctcp.massey.ac.nz/index.php?group=fialko&amp;page=home&amp;menu=fialko">http://ctcp.massey.ac.nz/index.php?group=fialko&amp;page=home&amp;menu=fialko</a>			

### 1b. Academic qualifications

11/07/2010, Dr. rer. nat. (with high distinction), University of Augsburg (Germany)  
20/06/2005, Master in Physics (with honour), Kiev National University (Ukraine)  
20/06/2004, Bachelor in Physics (with honour), Kiev National University (Ukraine)

### 1c. Professional positions held

Since September 2010, Postdoctoral Fellow, Massey University (New Zealand)  
2005-2010, Research and teaching assistant, University of Augsburg (Germany)

### 1d. Present research/professional speciality

I am working in the field of ultracold atomic gases. My research is focused on various many-body effects and quantum dynamics of these systems.

### 1e. Total years research experience

8 years

### 1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc)

14.07.14-18.07.14, **Invited talk**. International Workshop on Laser Physics, Sofia, Bulgaria.

11.10.13-13.10.13, **Contributed talk**. 7th Dodd-Walls Symposium, Dunedin

14.09.13-20.09.13, **Invited talk**. Quantum Technologies Conference IV, Warsaw, Poland.

26.08.13-30.08.13, **Invited talk**. APCTP-ICTP International Conference on Nanolinear Dynamics at the Nanoscale, Pohang, Korea.

01.03.13-30.02.16. **Fast-Start Marsden fund** for the project "Understanding Quantum thermodynamics with the smallest heat engine".

15.10.2012-15.11 2012, **Visiting Researcher** at the Swinburne University, Australia.

2010, **postdoctoral fellow** in the group of Prof. Joachim Brand. The title of the project: "Icy tornadoes in the quantum world – Josephson junctions of Bose-Einstein Condensates"

01.10-01.12 2007, **Research visit** to the Institute of Physics, USP, Sao Paulo, Brasil. Funded by DAAD (German Academic Exchange Service)

01.09-01.11 2006, **Research visit** to the Institute of Physics, USP, Sao Paulo, Brasil. Funded by DAAD (German Academic Exchange Service)

The Bachelor, Master and Doctoral diplomas were awarded with **high distinctions**.

1g. Total number of peer reviewed publications and patents	Journal articles	Books, book chapters, books edited	Conference proceedings	Patents
	16	0	2	0

## PART 2

### 2a. Research publications and dissemination

#### Peer-reviewed journal articles

1. **O. Fialko**, J. Brand, U. Zuelicke, "Fragility of the fractional quantum spin Hall effect in quantum gases", *New J. Phys.* 16, 025006 (2014)
2. **O. Fialko**, "Decoherence via coupling to a finite quantum heat bath", *J. Phys. B: At. Mol. Opt. Phys.* 47, 045302 (2014)
3. B. Opanchuk, R. Polkinghorne, **O. Fialko**, J. Brand, P. D. Drummond, "Quantum simulations of the early universe", *Annal. der Physik* 525, 866 (2013)
4. S.-W. Su, S.-C. Gou, A. Bradley, **O. Fialko**, J. Brand, "Kibble-Zurek scaling and its breakdown for spontaneous generation of Josephson vortices in Bose-Einstein condensates", *Phys. Rev. Lett.* 110, 215302 (2013)
5. **O. Fialko**, M.-C. Delattre, J. Brand, A. R. Kolovsky, "Nucleation in finite topological systems during continuous metastable quantum phase transitions", *Phys. Rev. Lett.* 108, 250402 (2012)
6. **O. Fialko**, J. Brand, U. Zülicke, "Soliton Magnetization Dynamics in Spin-Orbit Coupled Bose-Einstein Condensates", *Phys. Rev. A* 85, 051605(R) (2012)
7. R.G. Scott, F. Dalfovo, L.P. Pitaevskii, S. Stringari, **O. Fialko**, R. Liao, J. Brand, "The decay and collisions of dark solitons in superfluid Fermi gases", *New J. Phys.* 14, 023044 (2012)
8. **O. Fialko**, D. Hallwood, "Isolated quantum heat engine", *Phys. Rev. Lett.* 108, 085303 (2012)
9. **O. Fialko**, A. S. Bradley, J. Brand, "Quantum tunneling of a vortex between two pinning potentials", *Phys. Rev. Lett.* 108, 015301 (2012)
10. E. S. Annibale, **O. Fialko**, K. Ziegler, "Inelastic scattering of atoms in a double well", *Phys. Rev. A* 83, 043615 (2011)
11. **O. Fialko**, K. Ziegler, "Noise correlations of a strongly attractive spin-1/2 Fermi gas in an optical lattice", *J. Phys. B: At. Mol. Opt. Phys.* 43, 065304 (2010)
12. **O. Fialko**, A. Gammal, K. Ziegler, "Spin-1/2 fermions with attractive interaction in an optical lattice", *Phys. Lett. A*, 374, 3869 (2010)
13. **O. Fialko**, K. Ziegler, "Anderson localization in a correlated fermionic mixture", *Europhys. Lett.* 85, 60003 (2009)
14. Ch. Moseley, **O. Fialko**, K. Ziegler, "Interacting bosons in an optical lattice", *Ann. Phys. (Berlin)* 17, 48 (2008)
15. **O. Fialko**, K. Ziegler, "Light Scattering on Random Dielectric Layers", *Journal of Quantitative Spectroscopy & Radiative Transfer* 109, 2329 (2008)
16. **O. Fialko**, Ch. Moseley, K. Ziegler, "Interacting bosons in an optical lattice: Bose-Einstein condensates and Mott insulator", *Phys. Rev. A* 75, 053616 (2007)

#### Refereed conference proceedings

1. **O. Fialko**, K. Ziegler, "Functional-integral representation of atomic mixtures" in Proceedings of the 9th International Conference "Path integrals. New trends and perspectives", edited by W. Janke and A. Pelster, World scientific, 2007
2. K. Ziegler, **O. Fialko**, "Anderson localization in atomic mixtures" in Proceedings of the 9th International Conference "Path integrals. New trends and perspectives", edited by W. Janke and A. Pelster, World Scientific, 2007