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## Professional experience

- Currently: Primo Ricercatore (Associate Professor), INO-CNR (since 5/2003)
- since 03/2015 Contributing science writer and translator, ETH Zürich  
Hochschulkommunikation
- 2002-2003 Ricercatore (Assistant Professor), INFN, University of Pisa
- 1999- 2001 E.U. Post-doctoral research fellow, University of Pisa (Italy); Marie-Curie Individual Fellow (2000-2001)
- 1997 –98 Stipendiary Lecturer in Physics, Pembroke College, Oxford
- since 06/1997 Freelance science journalist (contributing to Süddeutsche Zeitung, Neue Zürcher Zeitung, Spektrum der Wissenschaft)
- 1995-97 Undergraduate tuition in physics at St. Peter's College and Oriel College, Oxford (coordinator: Prof. ██████████)

## Education and qualifications

- 1999 D.Phil., Oxford University (U.K.), conferred on 04/11/2000
- 1995 B.A. Honours in Physics; degree conferred on 04/11/1995
- 1990-92 University of Munich, Germany, Reading Japanese and Italian

## Prizes and scholarships

- 2000-2001 Marie Curie Individual Fellowship of the E.U. (proposal title: “Bose-Einstein condensates in optical lattices”, details under *Funding obtained*)
- 1995-1998 PhD scholarship from the Studienstiftung des Deutschen Volkes

## Teaching

Lecture course “Quantum Computation”, Dipartimento di Fisica, Pisa (since 2008)

Undergraduate teaching, University of Oxford (1995-98)

## Services to the scientific community

### *Activities as referee for:*

Phys. Rev. Lett., Phys. Rev. A., Phys. Rev. X, Science, Nature, Nature Physics, J. Phys. B., Journal Mod. Opt., Europhysics Letters, New Journal of Physics

### *Evaluation of research proposals for:*

Israel Science Foundation, French Science Foundation, Rustaveli Foundation (Georgia), EPSRC (U.K.), MIUR (Italy), FOM (Netherlands), Christian-Doppler-Preis (Austria), CNRS (France), Deutsche Forschungsgemeinschaft (Germany); European Commission

## Responsibilities in research projects

“MOQS”-Molecular Quantum Simulators (2020-2024), ITN; Principal Investigator

“RYSQ – Rydberg quantum simulators” (2015-2018), FET Proactive; Principal Investigator

COHERENCE – Marie Curie Training Network (2012-2016); co-supervisor

EMALI – Marie Curie Research Training Network (2006-2010); co-supervisor

NAMEQUAM - (2009-2012); E.U. STREP; researcher

"Properties of transport in classical and quantum systems" (2005-2006); PRIN; co-PI

## Publications (for details see attachment)

*Bibliometric indicators (as of 01.09.2021):* 78 indexed publications (Web of Science),

h-factor: 27; citations: 4750

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## Languages

German (native speaker), English (fluent), Italian (fluent), French (fluent), Turkish (basic)

## Peer-reviewed publications: 10 most cited papers

O. Morsch and M. Oberthaler, '*Dynamics of Bose-Einstein condensates in optical lattices*', Rev. Mod. Phys. **78**, 179-215 (2006)

O. Morsch, J. H. Müller, M. Cristiani, D. Ciampini, and E. Arimondo, '*Bloch oscillations and mean-field effects of Bose-Einstein condensates in 1D optical lattice*', Phys. Rev. Lett. **87** (2001), 140402

H. Lignier, C. Sias, D. Ciampini, Y. Singh, A. Zenesini, O. Morsch, and E. Arimondo, '*Dynamical control of matter-wave tunnelling in periodic potentials*', Phys. Rev. Lett. **99**, 220403 (2007)

M.G. Bason, M. Viteau, N. Malossi, P. Huillery, E. Arimondo, D. Ciampini, R. Fazio, V. Giovannetti, R. Mannella, and O. Morsch, '*High-fidelity quantum driving*', Nature Physics **8**, 147 (2012)

A. Zenesini, H. Lignier, D. Ciampini, O. Morsch, and E. Arimondo, '*Coherent control of dressed matter waves*', Phys. Rev. Lett. **102**, 100403 (2009)

C. Sias, H. Lignier, Y. P. Singh, A. Zenesini, D. Ciampini, O. Morsch, and E. Arimondo, '*Observation of photon-assisted tunnelling in optical lattices*', Phys. Rev. Lett. **100**, 040404 (2008)

M. Cristiani, O. Morsch, J.H. Müller, D. Ciampini, and E. Arimondo, '*Experimental properties of Bose-Einstein condensates in one-dimensional optical lattices*', Phys. Rev. A **65** (2002), 063612

A. Eckardt, M. Holthaus, H. Lignier, A. Zenesini, D. Ciampini, O. Morsch, and E. Arimondo, '*Exploring dynamic localization with a Bose-Einstein condensate*', Phys. Rev. A **79**, 013611 (2009)

M. Jona-Lasinio, O. Morsch, M. Cristiani, N. Malossi, J. H. Müller, E. Courtade, M. Anderlini, and E. Arimondo, '*Asymmetric Landau-Zener tunnelling in a periodic potential*', Phys. Rev. Lett. **91**, 230406 (2003)

M. Viteau, M.G. Bason, J. Radogostowicz, N. Malossi, D. Ciampini, O. Morsch, and E. Arimondo, '*Rydberg Excitations in Bose-Einstein Condensates in Quasi-One-Dimensional Potentials and Optical Lattices*', Phys. Rev. Lett. **107**, 060402 (2011)

## Books

O. Morsch, '*Quantum Bits and Quantum Secrets – How quantum physics is revolutionizing codes and computers*', Wiley-VCH (Weinheim and Berlin) (2008)

O. Morsch, *'Sandburgen, Staus und Seifenblasen'*, Wiley-VCH (Weinheim and Berlin), (2005)

O. Morsch, *'Licht und Materie. Eine physikalische Beziehungsgeschichte'*, Wiley-VCH (Weinheim and Berlin), (2003)

## **Book chapters**

E. Arimondo, D. Ciampini, O. Morsch, *'Bose-Einstein Condensates in 1D Optical lattices: Nonlinearity and Wannier-Stark Spectra'*, in: 'Nonlinearities in periodic structures and metamaterials', C. Denz, S. Flach and Y. Kivshar (eds.), Springer (Berlin) (2010)

O. Morsch, *'Shors Revolution'*, in: „Expedition in die Wissenschaft“, Wiley-VCH (Weinheim and Berlin) (2006)

O. Morsch and E. Arimondo, *'Bose-Einstein condensates in optical lattices in the nonlinear regime'*, in: 'Nonlinear Waves: Classical and quantum aspects, NATO Science Series II, Vol. 153', F. Kh. Abudllaev and V. K. Konotop (eds.) Kluwer Publishers (Dordrecht) (2004)

O. Morsch and E. Arimondo, *'Ultracold Atoms and Bose-Einstein Condensates in Optical Lattices'*, in: 'Dynamics and Thermodynamics of Systems with Long-Range Interactions', T. Dauxois, S. Ruffo, E. Arimondo and M. Wilkens (eds.), Springer Verlag (Berlin), p. 312-331 (2002)

E. Arimondo, D. Ciampini, O. Morsch, and J.H. Müller, *'Experiments with a Rubidium Bose-Einstein condensate'*, in: 'Introduction to modern methods of many-body theory and their applications', A. Fabrocini, S. Fantoni, and E. Krotscheck (eds.), World Scientific (Singapore), p. 179 (2002)

## **Popular science articles (selection)**

O. Morsch, „Rydberg Renaissance“, *Il Nuovo Saggiatore* 32(1-2), p. 37 (2016)

O. Morsch and I. Bloch, „Simulierte Quantenwelten“, *Spektrum der Wissenschaft*, 11/2014, p. 12 (Spanish translation: „Mundos quanticos simulados“, *Investigacion y ciencia*, 5/2015)

A. Di Pierro and O. Morsch, *'Computer quantistici'*, *Mondo Digitale* **12**, 48 (2013)

O. Morsch, „Hilfreiche Störungen“, *Neue Zürcher Zeitung*, 5. 02.2014

O. Morsch, „Kommunikation mit Quanten“, *Neue Zürcher Zeitung*, 15.08.2012

O. Morsch, „Auszeichnung für Quantendompteure“, *Spektrum der Wissenschaft*, 12/2012, p. 22

O. Morsch, „Simulierter Magnetismus“, *Neue Zürcher Zeitung*, 20.04.2011