

## **Short Curriculum Vitae (October 2018)**

### **Current Position**

Ricercatore di III livello at CNR-IOM, Trieste, Italy

### **Work address**

CNR-IOM DEMOCRITOS @ SISSA, via Bonomea 265, I-34136, Trieste, Italy

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### **Education, Degrees & Training**

- Degree in Physics at Universita' di Perugia, May 21, 1998, maximum marks cum laude. Thesis Title: "Phase Transitions in Superconducting Arrays"

Advisor: Prof. Pasquale Sodano

- PhD in Condensed Matter at SISSA (Trieste), October 26, 2001, maximum marks cum laude. Thesis Title: "Discrete Nonlinear Dynamics of Bose-Einstein Condensates" - available at <http://www.sissa.it/cm/phd.php>

Advisor: Prof. Augusto Smerzi

- April 2003: Euro Summer School on Quantum Gases in Low Dimensions, Les Houches (France).
- Knowledge of foreign languages: English and French

### **Publications: Bibliographical Data**

- 102 publications on international journals with referees (see the complete list in the full CV available at <http://people.sissa.it/~andreatr>)
  - 3 book chapters and 4 proceedings contributions
  - Total number of citations at 23 October 2018: 4249 (\*)
  - Hirsch index at 23 October 2018: 24 (\*)
  - 7 papers with more than 100 citations (\*)
  - Most cited papers at 4 January 2018 (\*):
    - F. S. Cataliotti et al., Science **293**, 843 (2001) – 930 citations
    - A Trombettoni and A. Smerzi, Phys. Rev. Lett. **86**, 2353 (2001) – 920 citations
- (\*) from the site <http://scholar.google.com>

### **Scientific Career**

- 2002-2004: INFM Fellowship “Giovani Valenti”, Postdoc, University of Parma
- November 2004-December 2004: Los Alamos National Laboratory, Los Alamos
- 2005-2006: Postdoc, University of Perugia
- 2006-2011: Ricercatore con contratto a tempo determinato at SISSA (Trieste)
- From September 2011: Researcher at CNR-IOM (Trieste)
- Italian “Abilitazione Scientifica Nazionale Professore Seconda Fascia” 02/B2 & 02/A2 (2012)
- Italian “Abilitazione Scientifica Nazionale Professore Prima Fascia” 02/B2 & 02/A2 (2017)

### **Visiting Scientist**

Longstanding collaborations with several international institutions:

- LANL (Los Alamos National Laboratory), Los Alamos (USA): Jul-Aug 2001, Apr-May 2002, Oct-Nov 2003, Oct-Dec 2004, Aug-Sep 2010, Oct 2017
- University of Heidelberg, Heidelberg (Germany): Nov 2006, May-Jun 2006, Nov 2007
- University of Nottingham (UK): Nov 2012, Feb 2014
- International Institute of Physics, Natal (Brasil): Jul-Sep 2012, Nov-Dec 2013, Mar

2014, Aug 2015, Jun 2016

- LENS (European Laboratory for Non-Linear Spectroscopy), Florence (Italy): Sep-Oct 2000, Jan-Feb 2001, Apr-May 2015
- CNR-INFN BEC Center, Trento (Italy): Sep-Oct 2002, Dec 2006
- Politecnico di Torino and ISI (Institute for Scientific Interchange), Torino (Italy): Jan 2006; Mar 2006

## **Teaching Experience**

Teacher of 30 Courses in several institutions, including:

- Course of Statistical Physics of Cold Atoms, Ph. D. in Statistical Physics, SISSA: Each year from 2006
- Course of Quantum Physics, International Master Course in Physics of Complex Systems (Torino-Trieste-Paris): Each year from 2006.
- Course of Nonlinear Dynamics of Ultracold Atoms, Spring College on Physics of Complex Systems, ICTP (Trieste), May-June 2013.
- Course of Introduction to Superconductivity and Superfluidity, University of Trento: 2011-2013
- Course on "New Phenomena in Cold Atomic Physics", Ph. D. of University of Perugia, May 2008.
- Course of Statistical Physics of Cold Atoms at Heidelberg Graduate School of Fundamental Physics, November 2007.
- Quantum Mechanics: Exercises, University of Perugia, 2003-2004.

## **Advised Theses**

2006 – 2017 Supervisor of 10 PhD students and 14 Graduate Students

Currently Supervisor of 2 PhD Students

## **Organization of activities**

Co-organizer since 2006 of "ICTP-SISSA Statistical Physics Seminars": see the full list at the web page

<http://www.sissa.it/statistical/seminars/seminars.php>

(a list of recorded ICTPSISSA seminars is at

<http://www.sissa.it/statistical/videos.html>).

Co-organizer since 2009 of the SISSA Journal Club of Statistical Physics:

<http://www.sissa.it/statistical/journalclub.html>

Web master of the page of the Ph.D. in Statical Physics in SISSA:

<http://www.sissa.it/statistical/>

### **Reviewer for:**

Physical Review Letters, Physical Review A, Physical Review B, Physical Review E, Chaos, Journal of Physics B, Physica D

**Selected Invited Talks & Seminars** (*see the complete list in the full CV available in [people.sissa.it/~andreatr](http://people.sissa.it/~andreatr)*)

Speaker in more than 100 Invited talks and Seminars, including:

- MITP Workshop "Quantum Methods for Lattice Gauge Theories Calculations, Mainz (Germany), February 6, 2017.
- Program "Entanglement and Dynamical Systems", Simons Center for Geometry and Physics, Stony Brook (USA), November 7, 2016.
- LPHYS'16, XXV International Laser Physics Workshop, Yerevan (Armernia), July 14, 2016.
- Quantum Non-Equilibrium Phenomena, International Institute of Physics, Natal (Brasil), June 9, 2016.
- Winter Workshop on Ultracold Quantum Matter, Padova (Italy), 11 January 2016.
- "Functional Renormalization Group Portrait of O(N) Models", Coimbra (Portugal), 9 December, 2015.
- Workshop on Topological effects and synthetic gauge/magnetic fields for atoms and photons, Zagreb (Croatia), 1 October 2015.
- "Dirac Fermions and Symmetry-Locked Phases with Ultracold Fermions in Optical Lattice", Cold Atoms Meet High Energy Physics, ECT\*, Trento (Italy), 22 June 2015.
- 2014, ERG2014 - 7th International Conference on the Exact Renormalization Group, Lefkada (Greece).
- 2014, Conference on Quantum Engineering of States and Devices, Nordita, Stockholm (Sweden).
- 2014, Integrability in Low Dimensional Quantum Systems, Tihany (Hungary).
- 2014, XIX National Conference on Statistical Physics and Complex Systems, Parma (Italy).
- 2014, BECosmology - Workshop on non-equilibrium Bose-Einstein condensates and

- its application to Cosmology, Nottingham (UK).
- 2014, Workshop "Quantum Integrability, Conformal Field Theory and Topological Quantum Computation", International Institute of Physics, Natal (Brasil).
  - 2013, Correlations in Ultracold Atomic Systems, Padova (Italy).
  - 2013, XCIX Congresso Nazionale della Societa' Nazionale di Fisica, Trieste (Italy).
  - 2013, 22nd International Laser Physics Workshop, Prague (Czech Republic).
  - 2013, Workshop "Conical Intersections in Mathematical Physics", Institut Henri Poincaré, Paris (France).
  - 2012, School & Workshop "Advances in Quantum Technology: From Quantum Information to Quantum Devices", International Institute of Physics, Natal (Brasil).
  - 2012, Programme "Disordered Quantum Systems", Institute Henri Poincaré, Paris (France).
  - 2012, Galileo Galilei Institute Workshop "New quantum states of matter in and out of equilibrium, Galileo Galilei Institute Workshop, Florence (Italy).
  - 2011, XX International Laser Physics Workshop, Sarajevo (Bosnia and Herzegovina),
  - 2011, XVI Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, Parma (Italy),
  - 2010, Workshop on Emergence of New States of Matter in Magnetic Systems and Beyond, 9 July, 2010, ICTP, Trieste (Italy).
  - 2010, 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden (Germany).
  - 2009, Convegno Informale di Fisica Teorica, Sestri Levante (Italy).
  - 2008, Exact Results in Low-Dimensional Quantum Systems: 2nd INSTANS Summer Conference, Florence (Italy).
  - 2007, Statistical Field Theory of Quantum Devices, StatPhys23 Satellite Meeting, Perugia (Italy).
  - 2005, SOLIBEC, Solitons in Bose-Einstein Condensates, Almagro (Spain), February 9-12, 2005.
  - 2004, VII Volterra-CIRM International School on Quantum Probability and Spectral Analysis on Large Graphs, Levico (Italy).
  - 2003, 27th Workshop on Intrinsic Localized Modes and Discrete Breathers in Nonlinear Lattices, Erice (Italy).
  - 2002, Workshop on Nonlinear Dynamics in Classical and Quantum Mechanics, Sannomme' (Italy), October 10-11, 2002.
  - 2002, VI Congresso Societa' Italiana di Matematica Applicata e Industriale, Chia Laguna (Italy).
  - 2002, XXI Convegno di Fisica Teorica e Struttura della Materia, Fai della Paganella, Trento (Italy).
  - 2001, X International Laser Physics Workshop, Moscow (Russia).

## **Recent fundings**

2013-2017: PI of the Italian node of the European STREP "MatterWave".

2013-2015: Italian responsible of the Italy-Hungary Joint Project "Non-perturbative field theory and strongly correlated systems" (Accordo di Cooperazione Scientifica CNR/MTA Ungheria).

## **Organization of Conferences**

Co-Organizer of 20 International Conferences, including:

13 – 17 November 2017: Conference on Frontiers in Two-Dimensional Quantum Systems. Organizers: E. Gull, M. Koehl, S. Pilati, C. Sa de Melo, and A. Trombettoni. <http://indico.ictp.it/event/8006/>

19 – 23 September 2016: Conference on Exact Renormalization Group - ERG2016 ERG conference, Trieste (Italy). Organizers: R. Percacci, A. Scardicchio and A. Trombettoni. <http://indico.ictp.it/event/7608/>

3 - 17 September 2016: Summer School and Conference FOMO 2014 (Frontiers of Matter Wave Optics), Arcachon (France). Organizing Committee: M. Arndt, P. Bouyer, W. Ertmer, W. von Klitzing, E. Rasel, W. Schleich, and A. Trombettoni. <http://www.matterwaveoptics.eu/index.html>

25 – 29 July 2016: Workshop "Long-range interacting many-body systems: from atomic to astrophysical scales", Satellite of STATPHYS26, July 25 - 29 2016. Organizers: M. Kastner, M. Marsili, D. Mukamel, S. Ruffo and A. Trombettoni. <http://indico.ictp.it/event/7612/>

8 – 10 April 2015: CECAM Workshop "Computational Many-Body physics in the era of artificial gauge fields", Munich (Italy). rganizers: M. Capone, L. Pollet and A. Trombettoni. <http://wwwcecam.org/workshop-1167.html>

13 - 17 May 2013: ICTP Workshop "Ultracold Atoms & Gauge Theories", Trieste, Organizers: J. Dalibard, M. Lewenstein, G. Mussardo, C. Sa De Melo and A. Trombettoni. [http://cdsagenda5.ictp.it/full\\_display.php?email=0&ida=a12184](http://cdsagenda5.ictp.it/full_display.php?email=0&ida=a12184)

20 - 31 August 2012: "Advances in Quantum Technology: From Quantum Information to Quantum Devices", International Institute of Physics, Natal (Brasil). Organizers: S. Bose, C. de Morais-Smith, P. Sodano, and A. Trombettoni. <http://www.iip.ufrn.br/pg==oFWaxmYuJleYJjUsR2RGBnYB1TP&lang=en&inf===QTqNWP>

16 - 20 July 2012: ICTP Workshop "Quantum Simulations with Ultracold Atoms", Trieste. Organizers: I. Bloch, M. Inguscio, M. Lewenstein, G. Mussardo, and A. Trombettoni. [http://cdsagenda5.ictp.it/full\\_display.php?email=0&ida=a11174](http://cdsagenda5.ictp.it/full_display.php?email=0&ida=a11174)

6 - 10 June 2011: ICTP Workshop "Frontiers in ultracold Fermi gases", Trieste, June 6 - 10, 2011. Organizers: W. Ketterle, M. Kohl, G. Mussardo, S. Stringari, and A. Trombettoni. [http://cdsagenda5.ictp.it/full\\_display.php?email=0&ida=a10146](http://cdsagenda5.ictp.it/full_display.php?email=0&ida=a10146)

