

## **Short Curriculum Vitae**

### **Personal Data**

Name: Andrea Trombettoni

Born on January 9, 1973 – Foligno, Italy

Citizenship: Italian

Civil status: married, 2 daughters

### **Current Position**

Researcher at CNR-IOM, Trieste, Italy

### **Work address**

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**

- 59 publications on international journals with referees (see the complete list in the full CV available at <http://people.sissa.it/~andreatr/>)
- 2 book chapters and 4 proceedings contributions
- Total number of citations at 17 May 2014: 2100 (\*)
- Average citations per item at 17 May 2014: 34.43 (\*)
- Hirsch index at 17 May 2014: 15 (\*)
- 4 papers with more than 100 citations (\*)
- Most cited papers at 17 May 2014 (\*):
  - F. S. Cataliotti et al., Science **293**, 843 (2001) – 583 citations
  - A Trombettoni and A. Smerzi, Phys. Rev. Lett. **86**, 2353 (2001) – 563 citations
- Journal distribution:
  - Science: 1 - Phys. Rev. Lett.: 6 - Phys. Rev. A: 9 - Phys. Rev. B: 6 - Phys. Rev. D: 2 - Phys. Rev. E: 3 - Europhys. Lett.: 2 - New J. Phys.: 4 - J. High Energy Phys.: 1 - Nucl. Phys. B: 3 - J. Phys. A: 2 - J. Phys. B: 5 - Eur. Phys. J. B: 2 - Laser Phys.: 3 - Physica D: 1 - Int. J. Mod. Phys. B: 2 - Phys. Lett. A: 2 - Mol. Phys.: 1 - Math. Comp. Simul.: 1 - Chaos: 2 - J. Stat. Mech.: 2

(\*) from the site <http://www.isiknowledge.com>

## **Scientific Career**

- 2002-2004: INFN 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: Researcher at SISSA (Trieste)
- From September 2011: Researcher at CNR-IOM (Trieste)

## **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
- 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
- CNR-INFM BEC Center, Trento (Italy): Dec 2006; Sep-Oct 2002
- LENS (European Laboratory for Non-Linear Spectroscopy), Florence (Italy): Sep-Oct 2000; Jan-Feb 2001
- Politecnico di Torino and ISI (Institute for Scientific Interchange), Torino (Italy): Jan 2006; Mar 2006
- Institut fur Theoretische Physik, Stuttgart (Germany): Dec 2001

### **Teaching Experience**

Teacher of 18 Courses in several institutions, including:

- Course of Statistical Physics of Cold Atoms, Ph. D. in Statistical Physics, SISSA: 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 – 2013 Supervisor of 3 Graduate students and 7 PhD students

Currently supervisor of: 1 Post-Doc (Giacomo Gori), 1 PhD Student (Nicolo' Defenu), 1 Graduate Student (Matteo Puglini)

## **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>).

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*)

- 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 (International Centre for Theoretical Physics), 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).
  - 2008, XIII Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, Parma (Italy).
  - 2008, Workshop on Quantum Phenomena and Information: from Atomic to Mesoscopic Systems, Trieste (Italy).
  - 2007, Statistical Field Theory of Quantum Devices, StatPhys23 Satellite Meeting, Perugia (Italy).
  - 2005, Conference on Higher Dimensional Quantum Hall Effect, Chern-Simons Theory and Non-Commutative Geometry in Condensed Matter Physics and Field Theory, Trieste (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).
  - 2004, XIII International Laser Physics Workshop, Trieste (Italy), July 12-16, 2004.
  - 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, VII Convegno Nazionale di Fisica Statistica e dei Sistemi Complessi, Parma (Italy).
  - 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, Workshop on Bose-Einstein Condensates, Salerno (Italy).
  - 2001, X International Laser Physics Workshop, Moscow (Russia).

### **Organization of Conferences**

Co-Organizer of 11 Conferences, including:

29 September - 10 October 2014: Summer School and Conference FOMO 2014 (Frontiers of Matter Wave Optics). Organizing Committee: M. Arndt, P. Bouyer, W. Ertmer, W.von Klitzing, E. Rasel, W. Schleich, and A. Trombettoni.

<http://www.matterwaveoptics.eu/>

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 Moraes-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)

### **On-going-funding**

- 2013-2017: PI of the Italian node of the European STREP "MatterWave".
- 2013-2015: PI of the Italy-Hungary Joint Project CNR-MTA "Non-perturbative field theory and strongly correlated systems".
- 2013-2015: Financially supported by MIUR within the Italian PRIN "Collective quantum phenomena: From strongly correlated systems to quantum simulators".