

CURRICULUM VITAE

Sergio Caprara

Date of birth: April 1st 1967

Place of birth: Taranto.

Citizenship: Italian.

Languages: Italian (mother tongue), english, french, russian, spanish.

Address: Dipartimento di Fisica - Università di Roma Sapienza, P.le Aldo Moro, 2 I-00185 Roma.

E-mail: sergio.caprara@roma1.infn.it

web site: [http://server2.phys.uniroma1.it/gr/clc/sergio caprara.html](http://server2.phys.uniroma1.it/gr/clc/sergio%20caprara.html)

ORCID: 0000-0001-8041-323

Present position: since october 1st 2015 associate professor in Theoretical Condensed Matter Physics,
at the Department of Physics of the University of Rome Sapienza.

ACADEMIC CAREER

- Nov. 1985 - Jun. 1990 Physics courses at the University of Rome Sapienza.

- June 1990 Laurea in Fisica cum Laude, University of Rome Sapienza. Supervisor Prof. Claudio Castellani.

Title of the thesis: Meccanismo magnetico per la superconduttività in un sistema con accoppiamento fermione-spin localizzato (Magnetic mechanism for superconductivity in a system with fermion-localized spin coupling").

- Nov. 1990 - Oct. 1993 PhD courses in Physics at the University of Rome Tor Vergata.

- Jun. - Aug. 1994 Grant of the Consorzio Interuniversitario di Struttura della Materia (INFM) for a Project on

High-temperature superconductivity, at the Department of Physics of Rome Sapienza.

- September 1994 PhD in Physics, title of the Thesis: Modelli magnetici per i superconduttori ad alta temperatura critica (Magnetic model for high-Tc superconductors).

- Jun. - Dec. 1995 Grant CEE - HCM at the Laboratoire d'Etudes des Propriétés Electroniques des Solides, Grenoble.

- Jan. - Nov. 1996 Grant CEE - HCM at the Department of theoretical physics of the Kungl Tekniska Hogskolan, Stockholm.

- 1997 Grant INFM within the Progetto di Ricerca Avanzata 1996, at the Department of Physics of the University of Rome Sapienza.

- 1998 Grant INFM within the Progetto di Ricerca Avanzata 1996, at the Department of Physics of the University of Rome Sapienza.

- Jan. - Aug. 1999 Grant INFM within the Progetto di Ricerca Avanzata 1996, at the Department of Physics of the University of Rome Sapienza.

- Sep. 1999 - Feb. 2002 Research grant at the Unità di Roma1 of the Istituto Nazionale per la Fisica della Materia.

- Mar. 2002 - Set. 2015 assistant professor in Condensed Matter Physics, at the Department of Physics of the University of Rome Sapienza.

MAIN RESEARCH FIELDS

Strongly correlated electron systems; high-temperature superconductors; systems with charge and spin density waves; electron-phonon interaction; disordered quantum spin systems; quantum phase transitions; renormalization group; spintronics; molecular dynamics; non-adiabatic quantum-classical dynamics; oxide interfaces; inhomogeneous and disordered superconductors.

VARIOUS ACTIVITIES AT THE DEPARTMENT OF PHYSICS

- Since march 12th 2002 I am Scientific Secretary of the Scientific Committee of the Departmental Library.
- From september 24th 2002 to november 1st 2007 I was representative of the researcher in the Programming Committee.
- Since september 2002 I was appointed member of the Committee for the Trans-national European Evaluation Project (TEEP 2002) organized by the European Community. The final written report was evaluated by the Danish Evaluation Institute, Copenhagen.
- Since february 18th 2005 I am supervisor of the computer activities of the Departmental library.
- From april 12th 2005 to november 1st 2007, when the works were concluded, I have been appointed member of the Committee for the makeover of the Hall of the Marconi Building of the Department of Physics.
- Since february 14th 2007 I am member of the Commissione Qualità per le Lauree triennali in Fisica, Fisica ed Astrofisica and Tecnologie Fische e dell'Informazione (Quality Assessment Committee for teaching).
- From may 27th 2013 to november 22nd 2017 I have been member of the Commissione Paritetica Docenti-Studenti (Joint Student-Professor Committee) of the Faculty of Sciences.
- Since december 14th 2014 I am member of the Commissione per l'assicurazione della qualità per la ricerca del Dipartimento di Fisica (Quality Assessment Committee for research).
- Since december 10th 2014 I am Guarantor of the Students of the Faculty of Sciences.
- From november 23rd 2016 I am member of the Comitato di Monitoraggio (Monitoring Committee) of the Faculty of Sciences.

VARIOUS ACTIVITIES

- I was member of the organizing Committee of the conference Coherence and incoherence in strongly correlated system, Rome - Italy, 3-7 july 2007.
- I was member of the examining committee for a research position at the University of Camerino - Faculty of Pharmacy, scientific sector FIS/03 (Condensed Matter Physics).
- I was member of the organizing Committee of the conference CMD22 - Condensed Matter Division, European Physical Society, Rome - Italy, 25-29 august 2008.
- In 2012 I was appointed by the Faculty of Sciences member of the TFA Committee for the evaluation of candidates to the training courses for teaching mathematics and physics at High Schools.
- I was member of the organizing Committee of the conference Disorder and Corelations in Quantum Systems, Rome - Italy, 18-20 september 2013.
- I was member of the scientific Committee of the workshop Finance, Mathematics and Philosophy, Villa Mirafiori, Rome - Italy, 12 and 13 june 2014.
- In 2014 I was appointed by the Faculty of Sciences member of the TFA Committee for the evaluation of candidates to

the training courses for teaching mathematics and physics at High Schools.

I am a referee for the following journals:

Journal of Physics A: Mathematical and General; Journal of Physics: Condensed Matter; Superconductor Science and Technology; Physica Scripta; The European Physical Journal B; Physical Review; Physical Review Letters; Nature Materials.

VISITS AT SCIENTIFIC INSTITUTIONS

Besides my permanence abroad under post-doc grants, and several short visits, I have visited various institutions within scientific collaboration projects:

- Apr. - May 2008, two months at the Donostia International Physics Center, San Sebastian (Spain).
- 15 Apr. - 15 Jun. 2009, two months at the Donostia International Physics Center, San Sebastian (Spain).
- Feb. 2010, one week at the department of quantum physics of the Ecole Supérieure de Physique et de Chimie Industrielles, Paris (France).
- Apr. - May 2010, two months at the Donostia International Physics Center, San Sebastian (Spain).
- Feb. 2011, one week at the department of quantum physics of the Ecole Supérieure de Physique et de Chimie Industrielles, Paris (France).
- Mar. - Apr. 2011, two months at the Donostia International Physics Center, San Sebastian (Spain).
- Jun. 2013, one week at the department of quantum physics of the Ecole Supérieure de Physique et de Chimie Industrielles, Paris (France).
- Mar. 2014, one month at the department of quantum physics of the Ecole Supérieure de Physique et de Chimie Industrielles, Paris (France), as Invited Professor on the Chair Joliot.
- Mag. 2017, one month at the department of quantum physics of the Ecole Supérieure de Physique et de Chimie Industrielles, Paris (France), as Invited Professor on the Chair Joliot.

INVITED TALKS. I have given 30 invited seminar at international conferences.

TEACHING ACTIVITY

Courses at the University of Rome Sapienza (A.A.=academic year)

- A.A. 2003/2004: LABORATORIO DI FISICA SPERIMENTALE (TRATTAMENTO DATI) [8 CFU].
- A.A. 2005/2006 and 2006/2007: INTRODUZIONE ALLA MECCANICA QUANTISTICA [5 CFU].
- A.A. 2005/2006 and 2006/2007: COMPLEMENTI DI MECCANICA QUANTISTICA 1 [2 CFU].
- A.A. 2005/2006: MATERIA CONDENSATA [7 CFU].
- A.A. 2006/2007 to 2009/2010: FISICA GENERALE I [9 CFU] ..
- A.A. 2008/2009: MECCANICA STATISTICA [5 CFU].
- A.A. 2009/2010: SIMULAZIONE ATOMISTICA [6 CFU].
- A.A. 2010/2011 to 2016/2017: FISICA GENERALE II [8 CFU].
- A.A. 2015/2016: ANALISI E TRATTAMENTO DEI DATI SPERIMENTALI [3 CFU].
- A.A. 2016/2017: MECCANICA ANALITICA E RELATIVISTICA [6 CFU].
- A.A. 2017/2018: MECCANICA ANALITICA E RELATIVISTICA [6 CFU].
- A.A. 2018/2019: CONDENSED MATTER PHYSICS [6 CFU].

- A.A. 2018/2019: MECCANICA ANALITICA E RELATIVISTICA [6 CFU].
- A.A. 2019/2020: CONDENSED MATTER PHYSICS [6 CFU].
- A.A. 2019/2020: MECCANICA ANALITICA E RELATIVISTICA [6 CFU].

PhD COURSES

- Apr. 1994: Scuola di Dottorato di Ricerca in Fisica dell'Università di Modena, "Fenomenologia ed aspetti teorici della superconduttività alle alte temperature", 8 hours.
- Mar. - Apr. 1996: PhD school in Physics of the Kungl Tekniska Hogskolan, Stockholm, "Semiclassical models for Bloch electrons", 10 hours.
- Feb. 2000: PhD school of the Scuola Internazionale di Studi Avanzati (SISSA/ISAS), Trieste, "Density-Matrix Renormalization Group: Theory and applications", 5 hours.
- May - Jun. 2000: Dottorato di Ricerca in Fisica dell'Università di Roma Sapienza, "Il gruppo di rinormalizzazione per la matrice densità: teoria and applicazioni", 8 hours.
- Mar. 2007: Dottorato di Ricerca in Fisica dell'Università di Roma Sapienza, "Metodi di seconda quantizzazione nella fisica della materia condensata", 20 hours.
- Mar. 2008: Dottorato di Ricerca in Fisica dell'Università di Roma Sapienza, "Metodi di seconda quantizzazione nella fisica della materia condensata", 20 hours.
- Mar. 2009: Dottorato di Ricerca in Fisica dell'Università di Roma Sapienza, "Metodi di seconda quantizzazione nella fisica della materia condensata", 20 hours.
- Mar. 2010: Dottorato di Ricerca in Fisica dell'Università di Roma Sapienza, "Metodi di seconda quantizzazione nella fisica della materia condensata", 20 hours.
- Jun. 2013: Dottorato di Ricerca in Fisica dell'Università di Roma Sapienza, "Metodi di seconda quantizzazione nella fisica della materia condensata", 20 hours.

SUPERVISION OF THESES: I have supervised 90 bachelor theses, 20 master theses.

PUBLICATIONS: I have authored 125 publications on peer-reviewed journals, and several proceedings and contributed chapters to various volumes. The full list is available at my website.