CURRICULUM VITÆ

Marco Grilli

Date of Birth	May 5th, 1961.
Place of Birth	Florence, Italy
Citizenship	Italian.
Languages	Italian (mother tongue), English, French, and German.
Address	Dipartimento di Fisica, Università di Roma "La Sapienza", P.le Aldo Moro 2, I-00185 Roma
e-mail	marco.grilli@roma1.infn.it
web site	http://www2.phys.uniroma1.it/doc/grilli/
ORCID	0000-0001-5607-7996

Education

May 1985	*Laurea in Fisica cum Laude*, Università di Roma "La Sapienza".
Oct 1986 - Jun 1987	Scholarship by the International School for Advanced Studies (ISAS) in Trieste (Italy).
1990	*Ph. D. in Physics, Università di Roma "La Sapienza"*

Appointments

Present position	Full Professor in Theoretical Condensed Matter Physics by the Physics Dept. of the University of Rome "Sapienza"

2014	Qualified as a Full Professor in Theoretical Physics of Matter (02B2) and as Full Professor in Theoretical Physics (02A2)
June 2010	Idoneous as a Full Professor in Solid State Physics (FIS03-02B2)
October 98	Associate Professor (in Solid State Physics) by the Department of Physics of the University of Rome "La Sapienza"
October 91 - 98	Assistant Professor (in Solid State Physics) by the Department of Physics of the University of Rome "La Sapienza"
Nov. 90 - Oct. 91	Scholarship of the Consorzio Interuniversitario di Struttura della Materia (INFM) for a Project on High Temperature Superconductivity.

Scientific Activity

— *Bibliographical summary*

Author of more than 170 papers in international journals with referees (see attached list after p. 18). Number of ISI papers published in the last 10 years: 54; Hirsch index: 39 (ISI-WOS), 44 (GS); Total citations: about 6150 (GS);

— *Conferences, Schools, mid-term visits*

I taught in several postgraduate and international schools of Physics.

I have been invited to deliver talks in more than 50 international conferences.

I have been invited to spend several mid-term visits in international laboratories like, e.g., MIT (Cambridge, USA), LEPES (Grenoble, France), and École Supérieure de Physique et Chimie Industrielles (ESPCI) (Paris, France) For two times (in 2013 and 2016) I have been appointed the 'Joliot Chair' for a stay in Paris by the ESPCI.

Organization activity

— *Scientific organization*

- Chairman and member of the Scientific Committee of the International Conference on "Quantum coherence in strongly correlated fermion systems", July 22-26, 1996, Scuola Normale Superiore, Pisa, Italy;
- Scientific organizer and chairman of the parallel symposium on "Theoretical trends in high-temperature superconductivity: Problems and perspectives" within the INFMeeting, June 18-22, 2001, Rome, Italy.
- Coordinator of the Publication Committee for the "Strongly Correlated Electron Systems" part of the International Conference on Magnetism, ICM2003, held in Rome (Italy), July 27 -August 1, 2003.
- Scientific organizer and chairman of the parallel symposium on "New High-Tc and strongly correlated oxide materials" at the Meeting on "Matter, Materials and Devices" June 22-25, 2005, Genova, Italia.
- Chairman and organizer of the international conference "Coherence and incoherence in strongly correlated systems", Rome, July 3-7, 2007.
- Chairman and organizer of the international conference "Disorder and correlations in quantum systems", Rome, September 18-20, 2013.
- Member of the Program Committee of the International Conference "Materials and Mechanisms of Superconductivity 2015", August 23-28, 2015, Geneva, Switzerland

— *Academic organization*

Member since 2008 and president (2009-2017) of the Committee of the Physics Department evaluating the admission to the Laurea Magistrale in Fisica and to the Laurea Magistrale in Astronomia e Astrofisica.

2017-2020, vice-president of the Didactic Area Council of the Physics Department of 'Sapienza' University of Rome.

2019-2022, President of the Teacher-Student Committee of the Science Faculty.

Since 2022, President of the Committee for the Quality (CGAQ) of the Didactic Area Council of Physics.

Referee Activity

I am referee of the following journals:

Nature, Nature Communications, Physical Review Letters, Physical Review B, Physical Review X, European Physical Journal B, Europhysics Letters, Jour-

nal of Physics: Condensed Matter, New Journal of Physics, Scientific Reports, Condensed Matter

I reviewed several projects submitted to the Italian Ministery of the University, to the National Science Foundation (NSF) of the United States, to the Natural Sciences and Engineering Research Council of Canada (NSERC) and to the European Research Council (ERC)

SCIENTIFIC ACTIVITY

[The references refer to the papers in the List of publications (see below after p. 16)].

Most of my research has been devoted to the study of many-body electron systems, to the emergence of complex collective properties, to quantum phase transitions in electronic systems.

A large part of my scientific activity has been carried out in the field of high temperature superconductors (HTSC), where many different issues of theoretical, experimental and applicative interest arise. In particular these systems are remarkable because they display a strongly anomalous metallic behavior indicating a violation of the standard Landau Fermi Liquid paradigm of the metallic state. They also are anomalous superconductors both because they likely have an unconventional pairing mechanism and because they display a pseudogapped phase possibly indicating a violation of the standard paradigm of Bardeen-Cooper-Schrieffer superconductivity. In this regard I investigated the problem of strong correlations in electronic and in electron-phonon systems, of magnetism, of the possible violations of the Fermi-liquid paradigm of the metallic state, of unconventional mechanisms for superconducting pairing, of quantum critical charge instabilities in electron systems ...

In the last years I extended my research activity to the field of low-dimensional disordered superconductors, oxide interfaces, electron systems with strong spin-orbit coupling, and topological electronic states.

I. Disordered electronic systems

This is the research of first years, where I investigated the metal-insulator transition in disordered systems. For non-interacting electrons I studied the critical behavior of the thermoelectric power at the Anderson transition [A3]. In collaboration with S. Sorella, I presented a suitable parametrization for a non-linear-σ model field-theoretical description of disordered electrons in the presence of electron-electron (e-e) interactions [A1].

II. The Mott-Hubbard metal-insulator transition

This research was motivated by HTSC, where an anomalous metallic state (i.e. seemingly violating the Landau paradigm of Fermi liquid (FL) theory) arises by doping an antiferromagnetic Mott insulator, thereby raising fundamental issues about the nature of the metallic state and how this may be disrupted. Therefore, in collaboration with G. Kotliar (and partly with A. Millis) I studied a strongly correlated electron system by means of a non-perturbative field-theoretical approach (the slave boson technique). In particular I investigated the effects of short-range magnetic correlations in a weakly metallic system formed by doping a Mott insulator and I showed that also in this extreme case of metallicity challenged by strong correlations and magnetism, a Landau FL description is possible and that superconductivity (SC) may occur [A7].

With my group in Rome I further studied the Hubbard model, the prototype of strongly correlated systems, to investigate the nature of the Mott insulating state and of the interaction-driven metal-insultor transition. Using the slave-boson approach we identified the nature of the coherent and incoherent excitations coexisting in the spectrum of system with strong e-e repulsion [A21],[A26].

III. Systems with electron-phonon (e-ph) interaction

I investigated the e-ph interaction in systems with strong e-e repulsion bridging for the first time the field of strongly correlated systems with the field of electrons coupled to the lattice [A27],[A74]. I found that strong correlations generically suppress the e-ph coupling. I also showed that a moderate e-ph coupling can drive a strongly correlated system unstable towards the formation of an electronic phase separation and inhomogeneous electronic states [A27], [A71].

I studied systems with strong short-range e-ph coupling (both with and without e-e interactions) to clarify the issue of polaron formation in these systems [A39],[A49]. The very nature of the polaron formation in the short-range e-ph case was definitively clarified by these works identifying the deep physical mechanisms underlying this phenomenon.

IV. High-Temperature Superconductivity: Charge inhomogeneities and quantum criticality

The high-T_c superconducting cuprates are intriguing systems because they display anomalous metallic properties violating the Landau FL paradigm of the metallic state and they are unusual superconductors both because of a (likely unconventional) strong pairing mechanism and because the presence of a pseudogap at T^* larger than the superconducting T_c might indicate a violation of the Bardeen-Cooper-Schrieffer (BCS) paradigm.

The main question is: the anomalous metallic properties and the large T_c are due to an exotic electronic state merely arising from strong correlations or rather are they due to some instability of the electronic liquid, which would form some kind of order?

This is the field where I reached the highest impact and international visibility giving a strong contribution in favor of the second point of view. In particular I showed that a) strongly correlated systems are easily prone to charge instabilities with the formation of inhomogeneous or charge-ordered electronic states [A11],[A24],[A27]; b) charge ordering (that in cuprates may stay latent because of low dimensionality, of disorder and of the competition with superconductivity) arises with a second-order transition ending at zero temperature into a quantum critical point (QCP) [A34], [A36], [A41]. This is the 'Ancient Romans' theory initiated long ago by our group in Rome.

V. Quantum critical phenomena in cuprate superconductors

The proposal of a QCP related to the formation of CDW in the optimal doping region of cuprates is an important achievement [A34] with many physical consequences. The presence of quantum critical fluctuations at $T = 0$ affects and rules the physics of cuprates due to the induced abundance of strong quantum critical (i.e. intrinsically dynamical) charge fluctuations [A64], which mediate a strong effective interaction between the quasiparticles. The abundant charge fluctuations also leave specific signatures in the electronic spectra [A75,A95,A108]. This allows to rationalize and understand some specific and unusual features of the spectra and, conversely, strengthen the CDW-QCP scenario. The strong effective interaction mediated by CDW depends strongly on doping, temperature, and on

the transferred momentum and can account for the strong superconducting pairing [A36], [A56]. Recent resonant X-ray scattering experiments found very well-formed and long-ranged CDW to exist even in overdoped cuprates, indicating that the charge-order tendency can hardly arise from long-ranged magnetic excitations [137]. More recently, RXS experiments identified very short-ranged CDW (named charge density fluctuations, CDF), which pervade the phase diagram of cuprates: while they coexist with CDW in underdoped cuprates at low-intermediate temperatures, CDF persist and are robust even at the highest temperatures and doping [142]. They are therefore low-energy nearly local fluctuations that might account for the anomalous metallic properties [A145,A150,A155,A157,A158]. Thus the 'Ancient Romans' theory provides a single interpretation scheme to both the anomalous metallic and anomalous superconducting properties.

Another important issue regards the strongly underdoped region, where my group found that nematic electronic states (a quantum electronic analogous of the liquid-crystal nematic states occurring in some soft matter systems) can occur as precursors of the CDW order setting in at larger doping [A118]. A nematic state has also been identified in Raman experiments on pnictide superconductors [A126,A148].

VII. Low-dimensional superconductors, oxide heterostructures, and systems with strong spin-orbit coupling

In the last years there has been an increasing interest in low-dimensional electronic states in the presence of superconductivity, disorder, or/and strong spin-orbit, possibly forming topologically non-trivial electronic states. Thus I devoted a good part of my more recent research activity to the study of the two-dimensional electron gas formed in some oxide interfaces or in Transition Metal Dichalcogenides (TMD). Also in this case, like in cuprates, I strongly shaped the overall field of oxide interfaces presenting a general new point of view: these systems are often strongly inhomogeneous and the superconducting state therein is either percolative or it has an unusual quantum critical character. This novel perspective is steadily gaining support from experiments and it has been elaborated following three main lines:

a) a phenomenological analysis of transport properties (resistance, Hall, magnetoresistance,...) showing that these interfaces are a strongly inhomogeneous

mixture of regions with different electron densities and different superconducting properties [A107,A109,A110,A149,A151,A154; b) a microscopic study of possible realistic mechanisms, which could induce such highly inhomogeneous states [A105], [A111], [A125]; c) the inhomogeneities can give rise to a spatially non-uniform Rashba spin-orbit coupling, with unusual and intriguing physical consequences [A123,A130,A135,A138,A139,A143] with the possible formation of inhomogeneous topological states.

MORE DETAILS ON THE SCIENTIFIC ACTIVITY

Schools, Conferences, and Workshops

I participated to more than 70 conferences and workshops and I have been invited to present talks in more than 50 of them. Among these I mention:

– March Meeting of the "American Physical Society" in St. Louis (USA) (March 1989).

– International Conference on "Materials and Mechanisms of Superconductiity – High-Temperature Superconductors M^2S-$HTSC$ IV, July 4-9, 1994, Grenoble, Francia.

– Euroconference on: "Cross-over phenomena in solid state physics: from weak to strong coupling in electronic systems", October 3-7, 1994, Torino, Italy.

– 3rd International Workshop on "Phase separation, electronic inhomogeneities and related mechanisms for high T_c superconductors", Erice (TP), Italy, July 9-15, 1995.

– International Euroconference on "Magnetic Correlations, Metal-Insulator Transitions and Superconductivity in Novel Materials", Groningen, The Netherlands, October 8-13, 1995.

– International NATO Conference on "Fluctuation Phenomena in High Critical Temperature Superconducting Ceramics", Trieste, Italy, August 6-9, 1996.

– Workshop on "High Temperature Superconductivity", presso l'Aspen Center for Physics, July 6 - August 9, 1998, Aspen, Colorado.

–International Workshop on "Electronic crystals, ECRYS-99", May 31 - June 5 1999, La Colle sur Loup (France)

– 18th General Conference of the Condensed Matter Division of the European Physical Society, 13-17 Marzo 2000, Montreux, Swiss.

– International Symposium on "Itinerant and Localized states in HTSC", April 6-10 2000, Klosters, Swiss.

– International Workshop on "Quantitative comparison of Fermi-liquid instabilities at magnetic-nonmagnetic transitions in terms of spin-fluctuation models and beyond", October 5-7 2000, Castelvecchio Pascoli, Italy.

– 19th General Conference of the European Physical Society Condensed Matter Division and Condensed Matter and Materials Physics, 7-11 April 2002, Brighton, UK.

– Workshop on "Emergent materials and highly correlated electrons", August 5-16, 2002, Trieste, Italy

– Workshop sponsored by the Institute for Complex Adaptive Matter (ICAM) on "Quantum Criticality in Condensed Matter", 20-23 Mar, 2003, Columbia University, New York, USA.

– International Conference on "Dynamical Properties of Solids" XXIX, September 22-25, 2003, Trieste (Italy).

– International Conference on "Spectroscopies in Novel Superconductors", Sitges, Spagna, 11-16 luglio 2004.

– Workshop "Ordering Phenomena in Cuprate Superconductors", November 4-5, 2004, Munich, Germany.

– 30-th Conference of the Middle European Cooperation in Statistical Physics, 3 - 6 April 2005, Cortona, Italy

– International "De Gennes Days Symposium on Superconductivity and Magnetism", May 14th, 2008, Ecole Normale Supérieure, Paris, France.

– International Conference on Strongly Correlated Electron Systems, SCES 2008, August 17-22nd, 2008, Armacao dos Buzios, Rio de Janeiro, Brazil.

– Workshop "Properties of high temperature superconductors", 13-16 Aprile 2010, Muenich, Germania

– International conference "Quantum in Complex Matter: Superconductivity, Magnetism and Ferroelectricity", May 27th - June 1st 2013, Ischia, Italy.

– Italian National Conference on Condensed Matter Physics, Milan (Italy), 09-13 september 2013.

– International Conference "SUPERSTRIPES 2014", July 25-31, 2014 Erice, Italy.

– International Workshop on "Probing and Understanding Exotic Superconductors and Superfluids" 27-31 October 2014, Trieste, Italy

–International workshop "Computational Many-Body physics in the era of artificial gauge fields", April 8-10, 2015, Munich

– International Conference "Spin-orbit coupling in surface or interface states", 8-12 June 2015, Spetses, Greece

– International Workshop "Superconductivity on the Verge", July 27-31, 2015, Leiden, The Netherlands

– International Conference "Materials and Mechanisms of Superconductivity 2015", August 23-28, 2015, Geneva, Switzerland

– "International Symposium on light scattering in superconductors", September, 4th 2015, Dresden, Germany.

– 101^o Congresso Nazionale SIF, Rome 21-25 September 21-25, 2015.

– "Ringberg-Symposium on HTSC", 11-16 October 2015, Ringberg, Germany.

– "Strong Correlations and the Normal State of the High Temperature Superconductors" International Workshop and Seminar, 17 - 27 May 2016, Dresden, Germany

– Superstripes 2017, Quantum physics in Complex Matter: Superconductivity, Magnetism and Ferroelectricity Ischia (Naples) June, 4-10, 2017.

POLIMI and Stanford RIXS/REXS workshop, Milan, Italy, 24-26 May 2017.

– Physics and chemistry of emerging superconductors and thermoelectric materials, September 13-15, 2017, Rome, Italy

– CIMTEC 2018, 8TH Forum on New Materials, June 10-14, 2018, Perugia, Italy

– LEES 2018, International Conference on Low-Energy Electrodynamcis in Solids, June 24 ? 29, 2018, Portonovo (AN), Italy

– 12th International Conference on Materials and Mechanisms of Superconductivity and High-Temperature Superconductors, August 19-24, 2018, Beijing, China

– 13th International Conference on Materials and Mechanisms of Superconductivity & High Temperature Superconductors (M2S2022), July 17 - 22, 2022, Vancouver, BC, Canada.

– Quantum Complex Matter International Conference 'Superstripes 2023' June 26-July 1, 2023, Ischia (Naples), Italy

– Kavli Institute for Theoretical Physics, International Conference on 'Electron Correlations beyond the Quasiparticle Paradigm: Theory and Experiment', September 18-21, 2023, Santa Barbara, USA

– International conference on "Strange metals in quantum materials and quantum emulators", December, 11-15, 2023, Bad Honnef, Germany.

– International Workshop 'Physics and Topology', January 29-31, 2024, Rome, Italy.

ACADEMIC ACTIVITIES

As an international expert I have been a member of "Jury de thése" to confer the Ph.D. title in French Institutions (Université J. Fourier, in Grenoble and Ecole Superieure de Physique et Chemie Industrielles in Paris) and to confer the title of "Doktors der Naturwissenschaften" of the Brandenburgische Technische Universität Cottbus

International Schools

I was invited to give a short course during the following international Schools of Physics:

– "Fifth International Petra School of Physics", September 1989, Amman, Jordan, (ref. P3);

– "XVI International School of Theoretical Physics", Ustron-Jasnowiec, Katowice, Poland, September 16-22, 1992 (ref. P5);

– "Superconductivity in Fullerenes, Oxides and Organic Materials", Scuola Normale Superiore, Pisa, Italy, January 21-25, 1993.

– "Physics and Chemistry of Unconventional Superconducting Materials", Scuola Normale Superiore, Pisa, Italy, May 28-30, 1994.

– "New Perspectives in Unconventional Superconducting Materials", Scuola Normale Superiore, Pisa, Italia, January 18-26, 1996 (Introductory course on "Strongly Correlated Electron Systems").

– "Parma School of theoretical Physics", Parma, Italy, 31 August - 11 September 1998.

– "International School of Physics and Technology of Matter", Italy, Otranto 16-22 September 2012.

– XXI Training Course in the Physics of Strongly Correlated Systems, by The International Institute for Advanced Scientific Studies (IIASS), October 2- 13, 2017, Vietri (SA), Italy

Ph. D. Schools

Along the years I held the following courses at the Ph. D. School of Physics of the University of Rome "La Sapienza":

– “Traditional theory of superconductivity”

– “Strongly interacting electron systems”

– “Correlated electrons and scattering from dynamical impurities”

– “The Mott-Hubbard transition”

Courses held in Rome at the University ”La Sapienza”

(1991-1998) In the Corso di Laurea in Fisica of the University of Rome “La Sapienza”: Exercises in General Physics I and II, Experimental Physics I, Condensed Matter Physics;

in the Corso di Laurea in Biologia of the University of Rome “La Sapienza”: Exercises in Experimental Physics;

in the Corso di Laurea in Chemistry of the University of Rome “La Sapienza”: Exercises in General Physics II.

Nov. 1998 - June 2005: Course on General Physics of the Corso di Laurea in Natural Sciences and in the Corso di Laurea in Environmental Sciences of the University of Rome “La Sapienza”.

Sept 2005- now: in the Corso di laurea in Physics: Courses on “Analytical and relativistic Mechanics”, “Superconductivity and superfluidity”, ‘Condensed Matter” “Statistical Mechanics”, “Many-Body physics”

Media and educational activities

- Guest of the television program "Superconduttori" broadcasted by the Italian national network Rai Educational (presenter Luciano Onder) on January 2oth, 2006 (http://www.raiscuola.rai.it/categorie/scienze/110/1/default.aspx).

- Recorded some short spots related to physical concepts (field, electric chartge, conduction) for an educational program of the national network Rai Educational.

- Public lecture "Superconduttori vecchi e nuovi: la storia centenaria di un fenomeno ancora giovane" by the Palazzo dei musei, Modena, May 22nd, 2007. Meeting patronized by the Comune and Provincia of Modena and by the University of Modena and Reggio Emilia

(https://www.youtube.com/watch?v=PryiQPOiClE).

- Since several years held an educational lecture on superconductivity for high-school students organized by the Physics Department

(http://server2.phys.uniroma1.it/gr/clc/MGrilli/SUPERCONDUTTIVITA-ROMA.pdf).

- Following the recent publication of my results on electronic soft matter states on Nature Communications and on Nature Physics (see Ref. A118 and A126 in the List of publications), a note has been published by the press agency ANSA.

(http://www.ansa.it/scienza/notizie/rubriche/fisica/2016/02/25/dal-cuore-morbido-della-materia-i-futuri-dispositivi-hi-tech-_ab244278-e0c0-4b09-8afe-a543a5b8a977.html)

Interview by the Italian radio broadcast Radio3 Scienza to comment on the 2016 Nobel Prizes to Thouless, Kosterlitz, and Haldane.

http://www.radio3.rai.it/dl/portaleRadio/media/ContentItem- f9e2892d-862b-42c8-8219-3c3e2e0fc02d.html

Iterviewed by several newspapers to comment on the 2016 Nobel Prizes to Thouless, Kosterlitz, and Haldane.

http://www.ansa.it/scienza/notizie/rubriche/fisica/2016/10/04/nobel-fisica-a-thoulesshaldane-e-kosterlitz_13e7554c-3484-423a-ab64-92bbc2b6bb0d.html
http://ns-game.com/2016/10/04/nobel-fisica-2016-agli-scienziati-thouless-duncan-haldane-e/
http://www.swissinfo.ch/ita/tutte-le-notizie-in-breve/nobel-fisica-a-britannici-thouless–haldane-e-kosterlitz/42492956
http://www.laprovinciadicomo.it/stories/ansa/nobel-fisica-per-volto-esotico-materia_1204655_11/

http://www.tuttosport.com/news/notizia-ultima-ora/2016/10/04-16041777/nobel_fisica_per_volto_esot

http://www.corrieredellosport.it/news/notizia-ultima-ora/2016/10/04-16041776/nobel_fisica_per_volto

http://www.affaritaliani.it/notiziario/nobel_fisica_per_volto_esotico_materia-42866.html

http://www.lettera43.it/fatti/nobel-per-la-fisica-a-thouless-haldane-e-kosterlitz_43675262619.htm

http://www.quotidiano.net/cronaca/nobel-fisica-per-volto-esotico-materia-1.2565859

http://www.ilfattoquotidiano.it/2016/10/04/premio-nobel-per-la-fisica-2016-a-thouless-haldane-e-kosterlitz-per-la-scoperta-del-volto-esotico-della-materia/3074115/
http://www.ilgiornaledivicenza.it/home/cultura/nobel-fisica-al-volto-esotico-della-materia-1.5180373

LIST OF PUBLICATIONS

Marco Grilli

PAPERS

A1. Disordered electron systems with Hubbard interaction
C. Castellani, C. Di Castro, and M. Grilli
Physical Review B **34**, 5907 (1986).

A2. Matrix Field Theory for disordered electron systems
M. Grilli, and S. Sorella
Nuclear Physics B **295**, [FS21] (1988) 422-442..

A3. Thermoelectric power in disordered electronic systems near the Anderson transition
C. Castellani, C. Di Castro, M. Grilli, and G. Strinati
Physical Review B **37**, 6663 (1988).

A4. Possible occurrence of band interplay in high T_c superconductors
C.Castellani, C. Di Castro, and M. Grilli
Physica C **153-155**, 1659 (1988).

A5. Kondo lattice Hamiltonian for high T_c superconductors
C.Castellani, C. Di Castro, and M. Grilli
International Journal of Modern Physics B, Vol. **1**, No.5 (1988) 659-665.

A6. Exact Canonical Averages from Microcanonical Dynamics for Quantum Systems
M. Grilli, and E. Tosatti
Physical Review Letters **62**, 2889 (1989).

A7. Fermi Liquid Parameters and Superconducting Instabilities of a Generalized t-J Model
M. Grilli, and G. Kotliar
Physical Review Letters **64**, 1170 (1990).

A8. Mean Field Theories of Cuprate Superconductors: a Systematic Analysis
M. Grilli, G. Kotliar, and A. J. Millis
Physical Review B **42**, 329 (1990).

A9. Renormalized Band Structure of CuO_2 Layers in Superconducting Compounds: a Mean Field Analysis
M. Grilli, C. Castellani, and C. Di Castro
Physical Review B **42**, 6233 (1990).

A10. Mean Field Phase Diagram of a Two Band t-J Model for CuO_2 Layers
C. Castellani, M. Grilli, and G. Kotliar
Physical Review B **43**, 8000 (1991).

A11. Superconductivity, Phase Separation and Charge Transfer Instability in the $U = \infty$ Limit of the Three Band Model of the CuO_2 Planes
M. Grilli, R. Raimondi, C. Castellani, C. Di Castro, and G. Kotliar
Physical Review Letters **67**, 259 (1991).

A12. Phase Separation and Superconductivity in the $U = \infty$ Limit of the Extended Multiband Hubbard Model
M. Grilli, R. Raimondi, C. Castellani, C. Di Castro, and G. Kotliar
International Journal of Modern Physics B Vol. **5**, 309 (1991).

A13. Phase separation and superconductivity in the Kondo-like spin-hole coupled model
N. Cancrini, S. Caprara, C. Castellani, C. Di Castro, M. Grilli and R. Raimondi
Europhysics Letters **14**, (6), 597 (1991).

A14. Phase separation, charge transfer instability and superconductivity in the three band extended Hubbard model: weak coupling theory revised
Y. Bang, G. Kotliar, C. Castellani, M. Grilli and R. Raimondi
Physical Review B **43**, 13724 (1991).

A15. Symmetry of hole states in superconducting oxides: correlation with T_c
C. Di Castro, L. F. Feiner, and M. Grilli
Physical Review Letters **66**, 3209 (1991).

A16. Superconductivity, Phase Separation and Charge Transfer Instability in the $U = \infty$ Limit of the Three Band Model of the CuO_2 Planes
Y. Bang, C. Castellani, C. Di Castro, M. Grilli, G. Kotliar, and R. Raimondi
Physica C **185-189**, (1991) 1525.

A17. Symmetry of hole states in superconducting oxides: correlation with T_c
C. Di Castro, L. F. Feiner, and M. Grilli
Physica C **185-189**, (1991) 1417.

A18. Apical oxygen ions and the electronic structure of the high T_c cuprates
L. F. Feiner, M. Grilli, and C. Di Castro
Physical Review B **45**, 10647 (1992).

A19. Phase separation in the large-N limit of the tJ model
M. Grilli, C. Castellani, and G. Kotliar
Physical Review B **45**, 10805 (1992).

A20. Single Particle and Optical Gap in Charge-Transfer Insulators
Y. Bang, C. Castellani, M. Grilli, G. Kotliar, R. Raimondi, and Z. Wang
International Journal of Modern Physics B Vol. **6**, 531 (1992).

A21. Collective excitations, photoemission spectra and optical gaps in strongly correlated Fermi systems
C. Castellani, G. Kotliar, R. Raimondi, M. Grilli, Z. Wang, and M. Rozenberg
Physical Review Letters **69**, 2009 (1992).

A22. Phase separation and superconductivity
C. Di Castro, and M. Grilli
Physica Scripta **T45**, 81 (1992).

A23. Charge collective modes and dynamic pairing in the three band Hubbard model: weak coupling limit, I
Y. Bang, G. Kotliar, C. Castellani, M. Grilli, and R. Raimondi
Physical Review B **47**, 3323 (1993).

A24. Charge collective modes and dynamic pairing in the three band Hubbard model: strong coupling limit, II

R. Raimondi, C. Castellani, M. Grilli, Y. Bang, and G. Kotliar
Physical Review B **47**, 3331 (1993).

A25. The Three Band t-J Model: a Systematic Large-N Analysis
S. Caprara and M. Grilli
Physical Review B **49**, 6971 (1994).

A26. Functional integral formulation of the slave-boson approach: beyond the mean-field treatment with the correct continuum limit
E. Arrigoni, C. Castellani, M. Grilli, R. Raimondi, and G.C. Strinati
Physics Reports **241**, 291 (1994).

A27. The electron-phonon interaction in the presence of strong correlations
M. Grilli, and C. Castellani
Physical Review B **50**, 16880 (1994).

A28. Comment on "Electronic model for superconductivity"
C. Castellani, C. Di Castro, and M. Grilli
Physical Review Letters (Comment) **72**, 3626 (1994).

A29. Phase separation and superconductivity in strongly interacting electron systems
S. Caprara, C. Castellani, C. Di Castro, and M. Grilli
Physica C **235-240**, 2155 (1994).

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