

CURRICULUM VITAE DI VIERI MASTROPIETRO

1. Dati personali

- *Luogo e data di nascita*: Firenze, 11 luglio 1966.
- *Cittadinanza* : Italiana.
- *Posizione*: Professore Ordinario di Fisica Matematica, Università degli studi di Milano

2. Riconoscimenti e premi

- Invited speaker allo *International Congress of Mathematicians ICM2010*, Hyderabad, India
- Plenary speaker allo *International Conference of Mathematical Physics ICMP2009*, Praga
- Invited speaker allo *International Conference of Mathematical Physics ICMP2000*, Londra
- Premio Annales Poincaré 2006
- Premio Persico della “Accademia dei Lincei” per gli anni 1987 ed 1989
- Membro del comitato scientifico del CMTP Levi Civita.

3. Pubblicazioni

Autore di una monografia, editore di due volumi ed autore di più di 90 articoli scientifici (78 mathscinet) su riviste internazionali tra cui *Comm. Math. Phys.* (19), *J. Stat. Phys.* (9), *Rev. Math. Phys.* (4), *Ann. Poincaré* (4), *Phys. Rev. Lett* (2), *Phys. Rev. B* (16), *Phys. Rev. E* (1), *Nonlinearity* (2), *Physica D* (2), *Physics Reports* (1), *Ann. of Phys* (1), *Nucl. Phys.* (2), *J. of Phys. A* (4), *Comm. Pure Applied Analysis* (2), *J. des mathematiques pures et Appliques* (1), *Ergodic Theory and Dynamical systems* (1), *Annali della Scuola Normale* (1).

4. Visite su invito (selezione)

- Institute for Advanced Study, Princeton. (2002, 2003, 2005, 2011)
- Rutgers University, New Brunswick. (1994, 2000, 2008, 2009, 2013)
- IHES (1997, 1999), ESI (2003, 2007) , Un. of Brasilia (2009), Vancouver (2008), ETH (2010)

5. Seminari in centri di ricerca (selezione)

- Princeton Statistical seminar (2000, 2002, 2011)
- Princeton Mathematical Physics seminar (2009, 2013)
- Rutgers Mathematical Physics seminar (2000, 2008, 2009, 2011, 2013)
- Colloquium, Albanova University, Stoccolma 2008
- Colloquium ETH, Zurigo (2009).

6. Presentazioni su invito in convegni internazionali (selezione)

- Selected Problems in Mathematical Physics La Spezia (2014)
- New frontiers for Majorana fermion, Laboratori Nazionali di Frascati (2014)
- Analytical aspects of mathematical physics, ETH Zurigo (2013)
- Statistical Mechanics Conference, Rutgers, USA (2013)
- Mechanics: classical, Statistical and quantum, Roma (2012)
- Quantum Many body systems, CRM, Montreal (2012)
- Quantum Field Theory aspects of Condensed Matter physics, Laboratori Nazionali di Frascati (2011)
- International Congress of Mathematicians, Hyderabad, (2010)
- International Conference of Mathematical Physics, Praga (2009)
- Swiss Physical Society meeting, Ginevra (2008)
- Quantum many-body systems, CRM Montreal (2008)
- American Mathematical Society Meeting, Vancouver (2008)
- Statistical Mechanics Conference, New Brunswick (2005)
- The Rigorous Renormalization Group, Oberwolfach, (2004)
- Mathematical problems in many body theory, ESI, Vienna (2004)

- International conference on Dynamical Systems, CTS, Taiwan (2004)
- Equadiff, Hasselt, Belgio (2003)
- Symposium and Euroworkshop on Hamiltonian systems, Clay Math. Institute, Edimburgo (2001)
- International Conference of Mathematical Physics, Londra (2000)

7. Corsi tenuti in centri di ricerca

- *Lecture Course on the Renormalization Group*, Heriot-Watt University, Edimburgo (2005)
- *Lecture course on Renormalization Group*, Università di Brasilia, Center of Condensed matter (2009)
- *Summer school on current topics in Mathematical Physics* ESI, Vienna, 16- 24 agosto 2011. *Universality and Critical behavior in Luttinger and Dirac liquids.*

8. Attività Editoriale

- Editore di "*Communications in pure and applied analysis*" per la sezione "Math. Phys" (dal 2002)
- Editore di "*Annales Henri Poincaré*" dal 2008, per la sezione "Mathematical Condensed Matter"

9. Alcuni convegni o scuole organizzate

- *Programma ESI* "Applications of the Renormalization group" allo ESI di Vienna (con H. Grosse, G. Gentile, G. Huisken) , da Ottobre a Novembre 2007.
- *Les Houches Summer school 2010* "Quantum theory from small to large scales" (con J. Frohlich, W. de Roeck, M. Salmhofer)
- *Scuola CIME* "Quantum many body systems" Cetraro 2010 (con A.Giuliani e J. Yngvason.)
- *Conferenza internazionale LNF-CMTP* "Quantum Field Theory aspects of Condensed Matter physics" Laboratori Nazionali di Frascati 6-9 settembre 2011 (con M.Lombardo ed M. Vozmediano)
- *Conferenza internazionale LNF-CMTP* "Mechanics: Classical, Statistical and Quantum" Roma, la Sapienza, 2-5 Giugno 2012 (con A. Giuliani e G.Gentile)
- *Conferenza internazionale LNF-CMTP* Disordered Systems and Random Matrix Theory, Un. Roma 3 Marzo 14-15, 2013 (con A. Giuliani e M. Lombardo)
- Recent results and open problems in mathematical physics 13-2-2015, GSSI, L'Aquila (with E/ Presutti, A. Giuliani)

10. Relatore di Tesi di dottorato

- A.Giuliani (2005)
- P.Falco (2006)
- M. Porta (2010)

11. Studi e qualifiche

- 1990. Università di Roma "La Sapienza". Laurea in Fisica *cum laude* (Relatore Prof. G. Gallavotti)
- 1990 – 1993. Università di Pisa. Dottorato in Fisica (Relatore Prof. G.Gallavotti)
- *Novembre 1993-Febbraio 1994* e *Maggio 1995-Dicembre 1995* Borsa INDAM
- *Marzo 1994-Marzo 1995* e *Marzo 1996-Novembre 1996* Borsa CNR per la matematica
- *Novembre 1996*. Ricercatore in Fisica Matematica presso l'università di Tor Vergata.
- *1 Settembre- 31 Dicembre 1999* Chercheur Associe' del CNRS alla Ecole Polytechnique di Prigi
- *Febbraio 2000*. Idoneità per un posto di professore associato in Fisica Matematica .
- *Novembre 2000*: Presa di servizio come professore associato di Fisica Matematica.
- *Luglio 2010*. Idoneità a professore ordinario in Fisica Matematica (presa servizio 1 ottobre 2012)

12 Didattica

- *a.a. 1993-1994*: ciclo di 40 seminari didattici per il corso di Istituzioni di Fisica Matematica, presso il dip. di Matematica dell'università di Roma "La Sapienza"
- *a.a 1994-1995 e 1995-1996*: Esercitazioni per il corso di Matematica Generale, facoltà di Economia, Università di Tor Vergata, Roma

- *a.a 1996-1997*: 2 cicli di lezioni su "Metodi Matematici" e "Metodi Probabilistici" per il dottorato in Economia e Istituzioni, università di Tor Vergata, Roma
- *a.a 1996-1997 e 1997-1998* Esercitazioni corso di Meccanica Razionale (Facoltà di Ingegneria, Tor Vergata)
- *a.a 1998-1999 e 1999-2000* Supplenza del corso di Meccanica Razionale (Facoltà di Ingegneria, Tor Vergata)
- *a.a 2000-2001* Due moduli di Meccanica Razionale (Facoltà di Ingegneria, Tor Vergata)
- *a.a 2001-2002* Un modulo di Meccanica Razionale ed un modulo di Analisi 5 (Facoltà di Ingegneria, Tor Vergata)
- *a.a 2002-2003* Un modulo di Meccanica Razionale, un modulo di Analisi 5, un modulo di probabilità e un modulo di Analisi 4 (Facoltà di Ingegneria, Tor Vergata)
- *a.a 2003-2010* Un modulo di Metodi Matematici per l'Ingegneria, un modulo di probabilità e un modulo di Metodi e Modelli per la Matematica Applicata (Facoltà di Ingegneria, Tor Vergata)
- *a.a 2010-2011* Un modulo di Metodi Matematici per l'Ingegneria ed un modulo di Metodi e Modelli per la Matematica Applicata (Facoltà di Ingegneria, Tor Vergata)
- *a.a 2012-2013* Corso di Meccanica Statistica (Dip. di Matematica, Milano)
- *a.a 2013-2014/2014-2015* Corso di Teoria Statistica dei Campi (Dip. di Fisica, Milano) e corso FM3 (Dip. di Matematica, Milano)

13 Visite (lista completa)

- 20/11-17/12 1994. *Rutgers University*, New Brunswick, USA (J.Lebowitz).
- 5/11-30/11 1996. *Nagoja School of Polymathematics*, Giappone (N.Obata).
- 23/4-30/4 1997. *Institut des Hautes Etudes Scientifiques*, Bures sur Yvette, Francia
- 5/10-30/10 1997. *Barcellona University*, Spagna (C.Simo').
- 1/11-9/11 1997. *Nagoja School of Polymathematics*, Japan (N.Obata).
- 10/11-30/11 1997. *Cambridge university*, UK (R. McKay).
- 15/11-30/11 1998. *Nagoya School of Polymathematics* (N. Obata)
- 1/9-1/10 1999. *Institut des Hautes Etudes Scientifiques* Bures sur Yvette, France
- 1/11- 30/11 2000. *Rutgers University*, New Brunswick, USA (J.Lebowitz).
- 1/3- 30/3 2002. *Ecole Polytechnique*, Parigi (J. Magnen)
- 15/4- 15/5 2002. *Short term visitor* allo *Institute for Advanced Studies of Princeton*, USA. (T.Spencer)
- 25/3-6/4 2003. *Georgia Institute of Technology*, Atlanta, USA.
- 15/4- 15/5 2003. *Short term visitor* allo *Institute for Advanced Studies of Princeton*, USA. (T.Spencer)
- 1/9- 12/9 2003. *Erwin Schrödinger Institute*, Vienna
- 10/5/2005-30/5/2005 *Heriot-Watt University*, Edimburgo (2005) (S.Kuksin)
- 27/11- 23/12 2005. *Short term visitor* allo *Institute for Advanced studies of Princeton* (T.Spencer).
- 17/10 2007-3/12 2007. *Erwin Schroedinger Institute*, Vienna (*ESI*)
- 3/10/ 2008-9/10 2008. *University of British Columbia*, Vancouver, Canada (D.Brydges).
- 10/10 2008-31/10 2008. *Rutgers University*, New Brunswick, USA (J.Lebowitz).
- 1/11 2009-15/11 2009. *Brasilia University*, Center of Condensed matter (A. Ferraz.)
- 17/11 2009-15/12 2009 *Rutgers University*, New Brunswick, USA (J.Lebowitz).
- 15/11- 15/12 2011. *Short term visitor* allo *Institute for Advanced studies of Princeton* (T.Spencer)
- 7/4- 15/4 2013. *GeorgiaTech*, Atlanta, USA (M. Loos)
- 15/4- 15/5 2013. *Short term visitor* alla *Rutgers University*, New Brunswick, USA (J.Lebowitz)
- 1/10- 30/10 2014. *Short term visiting professor* allo *International Institute of Physics*, Natal (Brasile)
- 16/12- 22/12 2014 *Short term visitor* allo *Institute for Advanced studies of Princeton* (T.Spencer)

14 Seminari su invito a conferenze internazionali (lista completa)

- 27/7-31/7, 1998 "Mathematical results in Statistical mechanics", Marsiglia. *Renormalization Group for The Holstein-Hubbard model*.
- 6/9-17/9 1999 "The determination of homoclinic trajectories in hamiltonian systems and Arnold diffusion", IHES, Parigi. *Three time scale a priori unstable systems and Arnold diffusion*.

- 17/7-22/7 2000: "XIII⁰ International Conference of Mathematical Physics", Londra. *Correlations in quantum chain models*.
- 18/9-22/9 2000, "Exact Renormalization Group", Roma. *Correlations in quantum chain models and vertex models*
- 21/5-31/5 2001 "Symposium and Euroworkshop on Hamiltonian systems", Clay math. Institute, Edimburgo. *Small divisors in a quantum statistical mechanics model*.
- 15-21 July 2001, "Iupap international conference on statistical physics", Cancun (Messico). *Renormalization Group for spin chains*.
- 9/6-16/6 2002 "Renormalization Group", Oberwolfach, Germany. *Renormalization Group for spin chains and bidimensional coupled Ising models*
- 14/9-19/9 2002 "Dynamical Systems: Classical, Quantum and Stochastic" Otranto. *Vanishing of the density-density critical index*
- 17/3-21/3 2003 "Statistical mechanics and probability theory" Marsiglia: *A Renormalization Group Computation of the incommensurate Holstein-Hubbard and the XYZ Correlation function*
- 5/4-6/4 2003 "Workshop on Hamiltonian Dynamics", Atlanta, USA. *Three time scale a priori unstable systems and Arnold diffusion*
- 22/7-26/7 2003 "Equadiff", Hasselt, Belgio. *Construction of periodic solutions of the nonlinear wave equation by Lindstedt series method*.
- 25/11/2003, "Dynamical systems and Control theory", SISSA, Trieste. *Periodic solutions in nonlinear PDE by RG methods*
- 25/6-28/6 2003 "International conference on Dynamical Systems", Tsing-Hua University, Hsinchu, Taiwan. *Lindstedt series in Wave equations*.
- 5/12-12/12 2004 "New mathematical problems in quantum many body theory" ESI, Vienna. *Generalized Luttinger liquid construction by Renormalization Group and Ward Identities*.
- 18/12-20/12 2005. "94 Statistical Mechanics Conference", Rutgers University, New Brunswick, USA. *Anomalies and Ward Identities in lattice spin models*
- 9/4-15/4 2006. "The Rigorous Renormalization Group", Oberwolfach, Germania. *Non perturbative anomalies in QFT*
- 25/6-18/6 2006. "6th AIMS international conference", Poitiers, Francia. *Renormalization Group approach to PDE*
- 18/9-22/9, 2006" III international conference on Exact Renormalization Group, Lefkadfa (Grecia) *Rigorous construction of the Tomonaga model*
- 14/12-20/12, 2006 Conference of statistical physics", Trieste. *Rigorous construction of the Ashkin-Teller model*
- 12/11-18/11 2007. "Renormalization in Quantum Field Theory, Statistical Mechanics and Condensed Matter", ESI, Vienna. *Schwinger-Dyson equations, Ward Identities and anomalies in nonperturbative RG*
- 27/3 2008. "2008 Swiss Physical Society-Manep meeting", Ginevra. *Proof of Fermi liquid behavior in the 2D Hubbard model*
- 30/9/2008 "Quantum many-body systems: Bose-Einstein condensation" al Centre de Recherches Mathematiques di Montreal. *2D Hubbard model on a the square and the honeycomb lattice*
- 5/10/2008 "Probability session" (D.Brydges and A.Kenyon) "American Mathematical Society Western Section Meeting" alla British Columbia University, Vancouver. *Extended scaling relation for planar spin models*
- 6-10/10/2008 "The renormalization group and statistical mechanics", Pacific Institute for Mathematical Sciences, Vancouver. *Rigorous Construction of the ground state correlations of the Hubbard model on the honeycomb lattice*
- 1-7/8/2009 "International Conference of Mathematical Physics" (Plenary speaker), Prague. *Universality, Ising models, and the non renormalization of the quantum anomalies*.
- 16-18/6/2010 "Renormalization: algebraic, geometric and probabilistic aspects" Institut Camille Jordan (Lyon) *Developments in the theory of universality*
- 26/8/2010 "International Congress of Mathematicians" (Invited speaker), Hyderabad. *Universality, Phase transition and extended scaling relations*

- 30/5 2012 Quantum Many-Body Systems CRM, Vancouver 28/5 - 1/6, 2012 (Universal properties of graphene)
- 8/6-9/6 2012 Journee Jacques Magnen. A scientific day in honour of Jacques Magnen on the occasion of his 65th birthday. Ecole Polytechnique, Palaiseau, Francia (The vanishing of Beta function by Ward Identities)
- 2/7-9/7 2012 *Universality in many body theory* Mechanics: classical, statistical and quantum. La sapienza, Roma
- 14/3-15/3 2014 Disordered Systems and Random Matrix Theory, Roma 3 *Exact Renormalization Group for disordered 2D Dirac fermions*
- 12/5-14/5 2013 Rutgers University, USA. *The 109th Statistical Mechanics Conference*. (Universal Conductivity Properties In Many Body Physics)
- 27/5-31/5 2012 *Analytical aspects of mathematical Physics*, ETH, Zurigo (Universality Results in Statistical Physics)
- 16/9-20/9 2013 International Conference on Applied Mathematics, Heraklion, September 16 - 20, 2013 (Universality results in statistical physics)
- 1/9-5/9 2014 New frontiers for Majorana fermions from condensed to dark matter INFN Frascati National Laboratories, Italy, Maggio 5-6, 2014 *Majorana fermions and universality*
- Selected Problems in Mathematical Physics 1/9-5/9 2014 Statistical Mechanics, Many-Body Quantum Physics and PDEs. La Spezia. (Localization in an interacting quasi periodic fermionic chain)
- 14/12-16/12 2014 Rutgers University, USA. *The 112th Statistical Mechanics Conference*. ("Localization in many body interacting quasi-periodic chain" and "Laudatio for G. Gallavotti".)

15 Seminari su invito in Centri di ricerca (lista completa)

- 20/9 1997 University of Barcellona, Spagna. Title: *Lindstedt Series and Moser Theorem*.
- 5/11 1997 Nagoja School of Polymathematics, Nagoja, Japan. *The stochastic limit of the Anderson model*.
- 15/11 1997 University of Cambridge, UK. Title: *Peierls instability in The Holstein model*.
- 16/11 2000. Rutgers University, New Brunswick, USA. Title: *The XYZ spin chain correlation functions*.
- 15/11 2000 "Statistical Mechanics Seminar" at Princeton University, USA. Title: *The Holstein-Hubbard Quasi-crystal model*.
- 15/3 2002. Ecole Polytechnique of Paris. Title: *Peierls instability and Incommensurate Charge Density waves*
- 24/4 2002 "Statistical mechanics seminar" at the Institute for Advanced Studies, Princeton. Title: *Renormalization Group and Ward identities for interacting fermionic systems*.
- 20/5 2005. Durham University, UK. Title: *Renormalization Group construction of quantum field theories*
- 30/4 2008 *Colloquium* in Theoretical physics at the Albanova and Nordita universities, Stockholm. Title: *Luttinger and Fermi liquids: a Constructive Renormalization Group approach*
- 8/10/ 2008 University of British Columbia probability seminar. *The Hubbard model on the square and honeycomb lattice by functional integral methods*
- 16/10 2008 Mathematical Physics seminar, Rutgers university. *Extended scaling relations for planar lattice spin models*
- 26/3 2009 Instituto de Ciencia de Materials de Madrid. *Rigorous construction of ground state correlation in graphene*
- 29/9/2009 ETH, Zurich. Theoretical Physics seminar. *Universal relations and Ward Identities in interacting Ising models, spin chains and graphene models*
- 1/12/2009 Princeton University, Mathematical Physics seminar. *Universal Relations for Non Solvable Statistical Models*
- 26/8/2010 Assemblée GNFM, Montecatini 3-5 Marzo 2011 *Universalita', transizioni di fase e relazioni di scala*
- 3/12/2009 Rutgers university, Mathematical Physics seminar. *Developments in the theory of universality*

- 7/12/2011 Princeton University, Statistical Physics seminar. *Universal conductivity in graphene: some rigorous result and open problems*
- 8/12/2011 Rutgers university, Mathematical Physics seminar . *Universal conductivity in graphene*
- 18/4/2012 KTH/Nordita/SU seminar in theoretical physics. Stoccolma *Universal conductivity in graphene*
- 12/4/2013 GeorgiaTech, Atlanta,USA *Universal Conductivity Properties In Many Body Physics*
- 16/4/2013 MATH PHYS Seminar, Princeton university, USA. *Universal finite size corrections and the central charge in non solvable Ising models*
- 25/4/2013 MATH PHYS Seminar, Rutgers university, USA. *Conductivity In The XXZ Heisenberg Chain With Next To Nearest Neighbor Interaction*
- 9/5 2014 *Universality in graphene and Weyl semimetals* The BFZ Seminar in Analysis - Basel, Fribourg, Zurich. Universita'di Zurigo
- 18 2 2015 *Height fluctuations for interacting dimers* , INFN Theory group seminars, Firenze
- 12/2/2015 *Small divisors in an interacting fermionic quasi-periodic chain* Gran Sasso Science Center GSSI, L'Aquila
- 21/10 2015 *Localization-Delocalization transition in an interacting quasi-periodic fermionic chain* ICTP/SISSA Statistical Physics seminar, ICTP, Trieste

16 Progetti di ricerca

- PRIN 2002-2002 (Sistemi dinamici classici quantistici e stocastici)
- PRIN 2002-2004 (Sistemi dinamici classici quantistici e stocastici)
- PRIN 2004-2006 (Problemi di evoluzione per sistemi a molti corpi classici e quantistici)
- PRIN 2008-2010 (Sistemi dinamici, equazioni alle derivate parziali e meccanica statistica)
- Senior member dello ERC Starting Grant CoMBoS-239694 (P.I G.Giuliani) (2009-2011)

17 Libri

- V.Mastropietro: *Non perturbative renormalization* World Scientific (2008)
- *Quantum Theories from Small to Large Scales.* J. Frohlich, V. Mastropietro, W. de Roeck, M. Salmhofer, L. Cugliandolo, eds. Les Houches School of Physics, Session 95 Oxford University Press
- *Quantum many body systems* A.Giuliani, J.Yngvanson V.Mastropietro ed. Springer (2012).
- *The Luttinger mode.* V.Mastropietro, D. Mattis. World Scientific (2013)

18 Articoli

Meccanica statistica classica

- A. Giuliani, V. Mastropietro "Universal Finite Size Corrections and the Central Charge in Non-solvable Ising Models" *Comm. Math. Phys.* 324 (2013) 1, 179214.
- A. Giuliani, R. L. Greenblatt, V. Mastropietro "The scaling limit of the energy correlations in non integrable Ising models" *J. Math. Phys.* 53, 095214 (2012)
- V.Mastropietro "Developments in the theory of universality" *J. Math. Phys.* 51, 015212 (2010)
- V. Mastropietro: "Ising models with four spin interaction at criticality." *Comm. Math. Phys.* 244, 3 , 595-642 (2004)
- V. Mastropietro: "Non Universality in Ising models with four spin interaction." *J. Stat. Phys.*, 111, 201-259 (2003)
- A. Giuliani, V. Mastropietro: "Anomalous universality in the Anisotropic Ashkin Teller model." *Comm. Math. Phys.* 256, 3, 681-735 (2005).
- G. Benfatto, P. Falco, V.Mastropietro. "Extended Scaling relations for planar lattice models" *Comm. Math. Phys.* 292,2, 569-605 (2009)
- G. Benfatto, P.Falco, V.Mastropietro. " Universal Relations for Non Solvable Statistical Models " *Phys.Rev.Lett* 104, 075701 (2010)
- G. Benfatto, V.Mastropietro. "Universal relations in non solvable quantum spin chains" *J. Stat. Phys.* 138, 6,1084 (2010)
- G. Benfatto, V.Mastropietro. " Drude Weight in Non Solvable Quantum Spin Chains " *J. Stat. Phys.* 142, 2,251 (2010)

- A. Giuliani, V. Mastropietro: “Anomalous critical exponents in the anisotropic Ashkin–Teller model.” *Phys. Rev. Lett.* 93, 190603–190607 (2005)

Teoria Matematica dei Campi Quantizzati

- G.Benfatto; P. Falco; V. Mastropietro. ‘ ‘Massless sine-Gordon and massive Thirring models: proof of Coleman’s equivalence.” *Comm. Math. Phys.* 285, 2, 713–762 (2009)
- G.Benfatto, P Falco, V.Mastropietro. “Functional Integral Construction of the Massive Thirring model” *Comm.Math. Phys.* 273, 1, 67–118 (2007).
- V.Mastropietro. “Renormalization Group and Ward Identities for Infrared QED4” *J.Math.Phys.* 48, no. 10, 102303 (2007)
- V.Mastropietro. “Non perturbative Adler-Bardeen Theorem” *J. Math. Phys.* 48, 2, 22302-22334 (2007).
- V.Mastropietro.”Non-perturbative aspects of chiral anomalies.” *J. Phys. A* 40, 33, 10349–10365 (2007)
- F.Bonetto, V. Mastropietro: “Critical Indices for the Yukawa2 model”, *Nucl.Phys.B*, 497, 541-554 (1997).
- V.Mastropietro: “Schwinger functions in Thirring and Luttinger models”, *Nuovo Cim.* vol.109B, N.10, (1993).

Meccanica Statistica Quantistica e teoria matematica della stato solido

- Benfatto, G.; Falco, P.; Mastropietro, V. Universality of one-dimensional Fermi systems, II. The Luttinger liquid structure. *Comm. Math. Phys.* 330 (2014), no. 1, 217282. 81
- Benfatto, G.; Falco, P.; Mastropietro, V. Universality of one-dimensional Fermi systems, I. Response functions and critical exponents. *Comm. Math. Phys.* 330 (2014), no. 1, 153215. 81V35
- Costa, L. C.; Ferraz, A.; Mastropietro, V. Ward identities and chiral anomalies for coupled fermionic chains. *J. Math. Phys.* 54 (2013), no. 12, 121901, 18 pp.
- Mastropietro, V. Interacting Weyl semimetals on a lattice *J.Phys. A* 2014
- Mastropietro, V. Weyl semimetallic phase in an interacting lattice system. *J. Stat. Phys* 2014
- V. Mastropietro ”Universality, exponents and anomaly cancellation in disordered Dirac fermions” *Nucl. Phys.*, 875, 2, 11 (2013) 408422
- V. Mastropietro Conductivity in the Heisenberg chain with next-to-nearest-neighbor interaction *Phys. Rev.*, E 87 (4), 042121 (2013)
- H. Herbut, V. Mastropietro Universal conductivity of graphene in the ultrarelativistic regime *Phys. Rev.*, B 87 (20), 205445 (2013)
- A. Giuliani, V. Mastropietro, M. Porta ”Universality of conductivity in interacting graphene” *Comm. Math. Phys.*, 311, 2, 317-355 (2012)
- A. Giuliani, V. Mastropietro, M. Porta ”Lattice quantum electrodynamics for graphene” *Annals of Phys.* 327, 461-511 (2012)
- V. Mastropietro ”Universal conductivity and dimensional crossover in multi-layer graphene” *Europhys. Lett* 97 37003 (2012)
- A. Giuliani, V. Mastropietro ”Exact RG computation of the optical conductivity of graphene” *Phys. Rev. B* 85, 045420 (2012)
- Mastropietro, V. ”Luttinger model and Luttinger liquids.” *Internat. J. Modern Phys. B* 26 (2012), no. 22, 1244006, 35
- G. Benfatto, V. Mastropietro. ”Drude weight in non solvable quantum spin chains.” *J. Stat. Phys.* 143, 2, 251260 (2011)
- A. Giuliani, V. Mastropietro, M. Porta ”Absence of interaction corrections in the optical conductivity of graphene” *Phys. Rev. B* 83, 195401 (2011)
- A. Giuliani, V. Mastropietro, M.Porta: “Lattice Gauge theory for graphene” *Phys.Rev B* 82, 121418(R) (2010)
- A. Giuliani, V. Mastropietro: “The Two-Dimensional Hubbard Model on the Honeycomb Lattice” *Comm. Math.Phys.* 293,301–346 (2010)
- A.Giuliani, V.Mastropietro, M.Porta: Renormalization Group for an effective model of graphene. *Ann. H Poincare’* 11, 1409-1452,2010

- V.Mastropietro. : Conductivity between Luttinger liquids: Coupled chains and bilayer graphene. *Phys Rev B*. 84, 035109 (2011)
- V.Mastropietro: “Mass generation in a fermionic model with finite range time dependent interactions.” *Comm. Math. Phys.* 269, 2, 401–424 (2007)
- A. Giuliani, V. Mastropietro:” Rigorous construction of ground state correlations in graphene: Renormalization of the velocities and Ward identities” *Phys Rev. B* 79, 201403–4 (2009)
- V.Mastropietro: “Luttinger liquid fixed point for a 2D flat Fermi surface” *Phys.Rev. B* 77, 195106 (2008)
- V.Mastropietro: “ Spin-Charge separation in two dimensions” *EPL* 84 57005 (2008)
- P.Falco, V.Mastropietro. “Renormalization Group and asymptotic spin-charge separation for Chiral Luttinger liquids” *J.Stat.Phys.* 131,79–116,(2008)
- V.Mastropietro. “ The absence of Logarithmic corrections in the 1d Hubbard model.” *J. Phys. A* 40, 13, 3347–3368 (2007)
- G. Benfatto, A. Giuliani, V. Mastropietro. “Fermi liquid behavior in the 2D Hubbard model at low temperatures.” *Ann. Henri Poincare’* 7, 5, 809–898 (2006) (*premio AHP 2006*)
- V. Mastropietro: “ Rigorous proof of Luttinger liquid behavior in the 1d Hubbard model.” *J. Stat. Phys.* 121, 3-4, 373–432 (2005).
- G. Benfatto; V. Mastropietro. “Ward identities and chiral anomaly in the Luttinger liquid.” *Comm. Math. Phys.* 258, 3, 609–655 (2005)
- G.Benfatto, V. Mastropietro: “Rigorous analysis of the Tomonaga model by means of Ward identities and the renormalization group”, letter, April (2005) *J. Stat. Mech.*
- G. Benfatto, V. Mastropietro. “Ward identities and vanishing of the beta function for $d = 1$ interacting Fermi systems.” *J. Statist. Phys.* 115, 1-2, 143–184 (2004).
- G. Benfatto, A. Giuliani, V. Mastropietro: “Low temperature analysis of two-dimensional Fermi systems with symmetric Fermi surface.” *Ann. Henri Poincare’* 4, 1, 137–193 (2003).
- V. Mastropietro: “Marginal Fermi liquid behaviour in the $d = 2$ Hubbard model with cut-off.” *Ann. Henri Poincare’* 3, 6, 1183–1213 (2002).
- G. Benfatto; V. Mastropietro: “On the density-density critical indices in interacting Fermi systems”. *Comm. Math. Phys.* 231, 1, 97–134 (2002).
- V. Mastropietro. “Peierls instability with electron-electron interaction’: the commensurate case.” *Commun. Pure Appl. Anal.* 1, 2, 135–159 (2002).
- G. Gallavotti, J. Lebowitz, V. Mastropietro. “Large deviations in rarefied quantum gases.” *J. Stat. Phys.* 108, 5-6, 831–861 (2002).
- V.Mastropietro: “Incommensurate Charge Density Waves in the adiabatic Hubbard- Holstein model” *Phys. Rev.B* 65, 75113, (2002)
- G. Benfatto, V.Mastropietro: “Renormalization group, hidden symmetries and Ward identities for the XYZ model”, *Rev. Math. Phys.*, Vol. 13, 11.1323-1435 (2001).
- G.Gentile, V.Mastropietro: “Renormalization group for fermions: a review on mathematical results.”, *Physics Reports* 352 , 4-6, 273–437 (2001).
- G.Gentile, V.Mastropietro: “Anderson localization for the Holstein model”. *Comm. Math. Phys.* 1,215,69-118 (2000)
- V.Mastropietro: “Anomalous superconductivity for coupled Luttinger liquids”, *Rev. Math. Phys.* 12, 12 1627-1654 (2000)
- V.Mastropietro: “Small denominators and anomalous behaviour in the incommensurate Holstein-Hubbard model”, *Comm. Math. Phys.*, 201, 81-115 (1999)
- V.Mastropietro: “Renormalization group for the XYZ model”, *Lett. in Math. Phys.*, 47, 339-352, (1999).
- V.Mastropietro, “Anomalous BCS equation for a Luttinger superconductor”, *Mod. Phys. Lett. B* 13, 17 585-597 (1999)
- G.Benfatto,G.Gentile,V.Mastropietro “Peierls instability for the Holstein model with rational density” *J. Stat. Phys.* 92, 1071-1113 (1998).
- G.Benfatto, G.Gentile, V. Mastropietro: “Electrons in a lattice with incommensurate potential” *J. Stat. Phys.*, 89, 655-708 (1997)

- F.Bonetto, V. Mastropietro: “Critical indices in a $d = 1$ filled band Fermi systems”, *Phys. Rev. B* 56,3,1296-1308 (1997)
- F.Bonetto, V.Mastropietro: “Filled band Fermi systems” *Mat.Phys.Elect.Jour* 2, 1–43 (1996)
- F.Bonetto,V.Mastropietro: “Beta Function and anomaly of the Fermi surface for a $d=1$ system of interacting fermions in a periodic potential”, *Comm. Math. Phys*, 172, 57-93 (1995)
- V.Mastropietro: “Interacting soluble Fermi systems in one dimension”, *Nuovo Cim.* 109B, 1, (1994)
- G.Benfatto, G.Gallavotti, V.Mastropietro: “Renormalization group and the Fermi surface in the Luttinger model”, *Phys. Rev. B* 45, 10, 5468-5480 (1992).

Equazioni alle Derivate parziali

- V. Mastropietro, M. Procesi. “Lindstedt series for periodic solutions of beam equations with quadratic and velocity dependent nonlinearities.” *Commun. Pure Appl. Anal.* 5 , 1, 1–28 (2006)
- G.Gentile, V. Mastropietro, M.Procesi: “Periodic solutions of completely resonant nonlinear wave equation” *Comm. Math.Phys* 256,2, 437–490.(2005)
- G.Gentile, V. Mastropietro: “Convergence of lindstedt series for the nonlinear wave equation” *Comm. on Pure and Applied Analysis* 3,3, 509-514 (2004)
- G.Gentile, V. Mastropietro: “Construction of periodic solutions of nonlinear wave equations with Dirichlet boundary conditions by Lindstedt series method” *Journal des Mathematiques Pures et Appliques*, 83 1019-1065 (2004)

Meccanica Classica e teoria KAM

- V. Mastropietro: “Arnold diffusion and the D’Alembert precession problem” *Reg. and Chaotic dynamics* 6 , 4, 355–375 (2001)
- G.Gallavotti,G.Gentile,V.Mastropietro, “A field theory approach to Lindstedt series for hyperbolic tori in three time scales problems”, *J. Math. Phys.* 40,12,6430-6472 (1999)
- G.Gallavotti,G.Gentile,V.Mastropietro “Hamilton-Jacobi equation, heteroclinic chains and Arnold diffusion in three time scale systems”, *Nonlinearity* 13, 323-340 (2000)
- G.Gallavotti,G.Gentile, V.Mastropietro: “ On homoclinic splitting problems” *Physica D* 137, 202–204 (2000)
- F. Bonetto, G.Gentile, V.Mastropietro: “Electric Fields on a surface of constant negative curvature”, *Ergodic theory and dynamical systems* 20,681-696 (2000)
- G.Gallavotti, G.Gentile, V.Mastropietro: “Melnikov approximation dominance:some examples”, *Rev. Math. Phys.*, 11, 4, 451-461 (1999)
- G.Gallavotti, G.Gentile, V.Mastropietro: “ Separatrix splitting for systems with three time scales”, *Commun. Math. Phys.*,202, 1, 89-126 (1999)
- G. Gallavotti, G. Gentile, V. Mastropietro: “Field Theory and KAM tori” *Math. Phys. Elec. Jour.* 1 1995 ISSN 1086-6655.
- G. Gentile, V. Mastropietro: “Tree expansion and multiscale analysis for KAM tori”, *Nonlinearity* 8, 1159-1178 (1995)
- G. Gentile, V. Mastropietro: “KAM theorem revisited” *Physica D* N.90, 1996, 225-234
- F.Bonetto, G.Gallavotti, G. Gentile, V. Mastropietro: “Quasi linear flows on tori and regularity of their linearization” *Commun. Math. Phys.*, 192, 707-730 (1998).
- F.Bonetto, G.Gallavotti, G. Gentile, V. Mastropietro: *Lindstedt series, ultraviolet divergences and Moser’s theorem*, *Ann. Scuola Normale di Pisa*, 26, 545-593, 1998
- G. Gentile, V. Mastropietro: “Methods for the analysis of the Lindstedt series for KAM tori and renormalizability in classical mechanics”, *Rev. Math. Phys.* vol.8, n.3, 393-444 (1996).

Probabilita’

- H.English,V.Mastropietro,B.Tirozzi: “The B.A.M. storage capacity”, *Jour. de Physique I*, 5, 85-96 (1995)
- L.Accardi, Y. Lu, V.Mastropietro: “Stochastic bosonization for a $d \geq 3$ Fermi system”, *Ann. de l’Ist. H.Poincare’*, 66, 2, 185-213 (1997).

- L.Accardi, V.Mastropietro: “Stochastic bosonization for a interacting $d \geq 3$ Fermi system”, *Ann. de l’Ist. H.Poincare’*, 66,2, 215-235 (1997).
- L.Accardi, V.Mastropietro, “Uniqueness of the prices in incomplete markets”, *Chubu forum for math. sci.*,27-38, (1998)
- L.Accardi, Y Lu, V. Mastropietro: “The semi-circle diagrams in the stochastic limit of the Anderson model”, *Infin. dimen. analysis, quantum. probab. and rel. top.*, 1, 3, 467-485 (1998)

Proceedings

- V.Mastropietro:” Universality, Phase transitions and Extended Scaling Relations” International Conference of Mathematics (2010)
- V.Mastropietro: ”Ising models, Universality and the non renormalization of the qatum anomalies” *XVI⁰* International Conference of Mathematical Physics, World Scientific (2010)
- V.Mastropietro: “Correlation in quantum chain models”, *XIII⁰* International Conference of Mathematical Physics, ed. Fokas et al, World Scientific (2001)
- G.Gentile, V.Mastropietro: “A possible mechanism for KAM tori breakdown”, *Hamiltonian Systems with Three or More Degrees of Freedom*, C. Simo, Nato Asi Series (1999)
- V.Mastropietro: “Correlations in quantum chain models and vertex models”, *Int. Jour. Mod. Phys.* 16,11 1875-1888 (2001)
- V.Mastropietro: “A Renormalization Group computation of the incommensurate Holstein Hubbard and the XYZ correlation functions”, *Mathematical results in statistical mechanics*, Solé et Al, World Scientific (1999).
- V.Mastropietro: “Stochastic limit for interacting fermions”, ”New Perspectives in the Physics of Mesoscopic Systems” ,World Scientific, (1997).

Articoli per Enciclopedia

- V.Mastropietro *Fisica Matematica* Enciclopedia Treccani (2000)
- V.Mastropietro. *Fermionic systems* Voce per la Encyclopedia of Mathematical Physics, edita da Francoise, Naber e Tsun (2006).