CURRICULUM VITAE DI VIERI MASTROPIETRO

1. Dati personali

- *Luogo e data di nascita*: Firenze, 11 luglio 1966.
- *Cittadinanza* : Italiana.
- *Recapito Universitario* : Dipartimento di Matematica, Università"Tor Vergata", Via della Ricerca Scientifica 2 − 00133 Roma, Italia.
- *Posizione:* Professore Associato di Fisica Matematica presso l'università "Tor Vergata" (dal 2000).
- Idoneità a Professore Ordinario conseguita presso l'universitá di Catania, concorso bandito sulla G.U. n. 52 del 04/07/2008, data certificazione regolarità atti: 29/07/2010.
- *Insegnamenti*: Meccanica Razionale (1996-2003), Probabilità (2004-2010), Metodi Matematici (2004-2011), Fisica Matematica (2004-2011).

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 Poincarè 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 84 articoli scientifici su riviste internazionali tra cui *Comm. Math. Phys.* (15), *J. Stat. Phys.* (8), *Rev. Math. Phys.* (4), *Ann. Poincaré* (4), *Phys. Rev. Lett* (2), *Phys. Rev. B* (15), *Nonlinearity* (2), *Physica D* (2), *Physics Reports* (1), *Ann. of Phys* (1), *Nucl. Phys.* (1), *J. of Phys. A* (3), *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)
- 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)
- Rutgers Mathematical Physics seminar (2000,2008,2009,2011)
- Colloquium, Albanova University, Stoccolma 2008
- Colloquium ETH, Zurigo (2009).

6. Presentazioni su invito in convegni internazionali (selezione)

- 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*, Universitá 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. Attivita' 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)

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*
- *1990 – 1993.* Università di Pisa. Dottorato in Fisica
- *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'universita' di Tor Vergata.
- *1 Settembre- 31 Dicembre 1999* Chercheur Associe' del CNRS alla Ecole Politecnique di Prigi
- *Febbraio 2000.* Idoneitá per un posto di professore associato in Fisica Matematica .
- *Novembre 2000*: Presa di servizio come professore associato di Fisica Matematica.
- *Luglio 2010.* Idoneitá a professore ordinario in Fisica Matematica.

12 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 Politecnique*, 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 Schrdinger 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)

13 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*: "$XIII^0$ 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.*
- *25/112003*, *"Dynamical systems and Control theory"*, SISSA, Trieste. *Periodic solutions in nonliner 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", Poiters, 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*
- *26/8/2010* Assemblea GNFM, Montecatini 3-5 Marzo 2011 *Universalita', transizioni di fase e relazioni di scala*

14 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 Politechnique 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*
- *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*
- *8/12/2009* Rutgers university, Mathematical Physics seminar . *Universal conductivity in graphene*

15 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)

16 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, in press.
- *Quantum many body systems* A.Giuliani, J.Yngvanson V.Mastropietro ed. Springer, in press.

17 Articoli

Meccanica statistica classica

- 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

- 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, 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)
- 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 Direchelet 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, "Uniquiness 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 quatum anomalies" XVI^0 International Conference of Mathematical Physics, World Scientific (2010)
- V.Mastropietro: "Correlation in quantum chain models", $XIII^0$ 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 Enciclopedie

- 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).

In corso di pubblicazione

- A.Giuliani, V.Mastropietro, M.Porta. Universal Conductivity in graphene. *Comm. Math.Phys.*
- V.Mastropietro. Universal conductivity and dimensional crossover in multi-layer graphene *Europhys. Lett.*