

# List of publications

## I. BOOKS

1. V.Mastropietro: *Non perturbative renormalization* World Scientific (2008)

## II. RESEARCH PAPERS

### A. Statistical physics

2. G. Benfatto, P.Falco, V.Mastropietro. “ Universal Relations for Non Solvable Statistical Models ” *Phys.Rev.Lett* (2010)
3. G. Benfatto, V.Mastropietro. “Universal relations in non solvable quantum spin chains” *J. Stat. Phys.* (2010)
4. V.Mastropietro ”Developments in the theory of universality” *J. Math. Phys.* (2010)
5. G. Benfatto, P. Falco, V.Mastropietro. “Extended Scaling relations for planar lattice models” *Comm. Math. Phys.* 292,2, 569–605 (2009)
6. A. Giuliani, V. Mastropietro: “Anomalous universality in the Anisotropic Ashkin Teller model.” *Comm. Math. Phys.* 256, 3, 681–735 (2005).
7. A. Giuliani, V. Mastropietro: “Anomalous critical exponents in the anisotropic Ashkin–Teller model. ” *Phys. Rev. Lett.* 93, 190603–190607 (2005)
8. V. Mastropietro: “Ising models with four spin interaction at criticality.” *Comm. Math. Phys.* 244, 3 , 595–642 (2004)
9. V. Mastropietro: “Non Universality in Ising models with four spin interaction.” *J. Stat. Phys.*, 111, 201-259 (2003)

### B. Many body theory

10. A. Giuliani, V. Mastropietro: “The Two-Dimensional Hubbard Model on the Honeycomb Lattice” *Comm. Math.Phys.* 293,301–346 (2010)

11. 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)
12. V. Mastropietro: "Luttinger liquid fixed point for a 2D flat Fermi surface" *Phys. Rev. B* 77, 195106 (2008)
13. V. Mastropietro: "Spin-Charge separation in two dimensions" *EPL* 84 57005 (2008)
14. P. Falco, V. Mastropietro. "Renormalization Group and asymptotic spin-charge separation for Chiral Luttinger liquids" *J. Stat. Phys.* 131, 79–116, (2008)
15. V. Mastropietro. "The absence of Logarithmic corrections in the 1d Hubbard model." *J. Phys. A* 40, 13, 3347–3368 (2007)
16. V. Mastropietro: "Mass generation in a fermionic model with finite range time dependent interactions." *Comm. Math. Phys.* 269, 2, 401–424 (2007)
17. G. Benfatto, A. Giuliani, V. Mastropietro. "Fermi liquid behavior in the 2D Hubbard model at low temperatures." *Ann. Henri Poincaré* 7, 5, 809–898 (2006) (*AHP prze 2006*)
18. V. Mastropietro: "Rigorous proof of Luttinger liquid behavior in the 1d Hubbard model." *J. Stat. Phys.* 121, 3-4, 373–432 (2005).
19. G. Benfatto; V. Mastropietro. "Ward identities and chiral anomaly in the Luttinger liquid." *Comm. Math. Phys.* 258, 3, 609–655 (2005)
20. 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.*
21. 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).
22. G. Benfatto, A. Giuliani, V. Mastropietro: "Low temperature analysis of two-dimensional Fermi systems with symmetric Fermi surface." *Ann. Henri Poincaré* 4, 1, 137–193 (2003).
23. V. Mastropietro: "Marginal Fermi liquid behaviour in the  $d = 2$  Hubbard model with cut-off." *Ann. Henri Poincaré* 3, 6, 1183–1213 (2002).

24. G. Benfatto; V. Mastropietro: “On the density-density critical indices in interacting Fermi systems”. *Comm. Math. Phys.* 231, 1, 97–134 (2002).
25. V. Mastropietro. “Peierls instability with electron-electron interaction’: the commensurate case.” *Commun. Pure Appl. Anal.* 1, 2, 135–159 (2002).
26. G. Gallavotti, J. Lebowitz, V. Mastropietro. “Large deviations in rarefied quantum gases.” *J. Statist. Phys.* 108, 5-6, 831–861 (2002).
27. V.Mastropietro: “Incommensurate Charge Density Waves in the adiabatic Hubbard-Holstein model” *Phys. Rev.B* 65, 75113, (2002)
28. G. Benfatto, V.Mastropietro: “Renormalization group, hidden symmetries and Ward identities for the XYZ model”, *Rev. Math. Phys.*, Vol. 13, 11.1323-1435 (2001).
29. G.Gentile, V.Mastropietro: “Renormalization group for fermions: a review on mathematical results.”, *Physics Reports* 352 , 4-6, 273–437 (2001).
30. G.Gentile, V.Mastropietro: “Anderson localization for the Holstein model”. *Comm. Math. Phys.* 1,215,69-118 (2000)
31. V.Mastropietro: “Anomalous superconductivity for coupled Luttinger liquids”, *Rev. Math. Phys.* 12, 12 1627-1654 (2000)
32. V.Mastropietro: “Small denominators and anomalous behaviour in the incommensurate Holstein-Hubbard model”, *Comm. Math. Phys.*, 201, 81-115 (1999)
33. V.Mastropietro: “Renormalization group for the XYZ model”, *Lett. in Math. Phys.*, 47, 339-352, (1999).
34. V.Mastropietro, “Anomalous BCS equation for a Luttinger superconductor”, *Mod. Phys. Lett. B* 13, 17 585-597 (1999)
35. G.Benfatto,G.Gentile,V.Mastropietro “Peierls instability for the Holstein model with rational density” *J. Stat. Phys.* 92, 1071-1113 (1998).
36. G.Benfatto, G.Gentile, V. Mastropietro: “Electrons in a lattice with incommensurate potential” *J. Stat. Phys.*, 89, 655-708 (1997)
37. F.Bonetto, V. Mastropietro: “Critical indices in a  $d = 1$  filled band Fermi systems”, *Phys. Rev. B* 56,3,1296-1308 (1997)
38. F.Bonetto, V.Mastropietro: “Filled band Fermi systems” *Mat.Phys.Elect.Jour* 2, 1–43 (1996)

39. 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)
40. V.Mastropietro: “Interacting soluble Fermi systems in one dimension”, *Nuovo Cim.* 109B, 1, (1994)
41. G.Benfatto, G.Gallavotti, V.Mastropietro: “Renormalization group and the Fermi surface in the Luttinger model”, *Phys. Rev. B* 45, 10, 5468-5480 (1992).

### C. Quantum Field Theory

42. 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)
43. G.Benfatto, P Falco, V.Mastropietro. “Functional Integral Construction of the Massive Thirring model” *Comm.Math. Phys.* 273, 1, 67–118 (2007).
44. V.Mastropietro. “ Renormalization Group and Ward Identities for Infrared QED4” *J.Math.Phys.* 48, no. 10, 102303 (2007)
45. V.Mastropietro. “Non perturbative Adler-Bardeen Theorem” *J. Math. Phys.* 48, 2, 22302-22334 (2007).
46. V.Mastropietro.”Non-perturbative aspects of chiral anomalies.” *J. Phys. A* 40, 33, 10349–10365 (2007)
47. F.Bonetto, V. Mastropietro: “Critical Indices for the Yukawa2 model”, *Nucl.Phys.B*, 497, 541-554 (1997).
48. V.Mastropietro: “Schwinger functions in Thirring and Luttinger models”, *Nuovo Cim.* vol.109B, N.10, (1993).

### D. Dynamical systems and KAM theory

49. 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)

50. G.Gentile, V. Mastropietro, M.Procesi: “Periodic solutions of completely resonant nonlinear wave equation” *Comm. Math.Phys* 256,2, 437–490.(2005)
51. G.Gentile, V. Mastropietro: “Convergence of lindstedt series for the nonlinear wave equation” *Comm. on Pure and Applied Analysis* 3,3, 509-514 (2004)
52. 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)
53. V. Mastropietro: “Arnold diffusion and the D’Alembert precession problem” *Reg. and Chaotic dynamics* 6 , 4, 355–375 (2001)
54. 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)
55. G.Gallavotti,G.Gentile,V.Mastropietro “Hamilton-Jacobi equation, heteroclinic chains and Arnold diffusion in three time scale systems”’, *Nonlinearity* 13, 323-340 (2000)
56. G.Gallavotti,G.Gentile, V.Mastropietro: “ On homoclinic splitting problems” *Physica D* 137, 202–204 (2000)
57. F. Bonetto, G.Gentile, V.Mastropietro: “Electric Fields on a surface of constant negative curvature”, *Ergodic theory and dynamical systems* 20,681-696 (2000)
58. G.Gallavotti, G.Gentile, V.Mastropietro: “Melnikov approximation dominance:some examples”, *Rev. Math. Phys.*, 11, 4, 451-461 (1999)
59. G.Gallavotti, G.Gentile, V.Mastropietro: “ Separatrix splitting for systems with three time scales” , *Commun. Math. Phys.*,202, 1, 89-126 (1999)
60. G. Gallavotti, G. Gentile, V. Mastropietro: “Field Theory and KAM tori” *Math. Phys. Elec. Jour.* 1 1995 ISSN 1086-6655.
61. G. Gentile, V. Mastropietro: “Tree expansion and multiscale analysis for KAM tori”, *Nonlinearity* 8, 1159-1178 (1995)
62. G. Gentile, V. Mastropietro: “KAM theorem revisited” *Physica D* N.90, 1996, 225-234

63. 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).
64. 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
65. 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).

### E. Stochastic models

66. H.English,V.Mastropietro,B.Tirozzi: “The B.A.M. storage capacity”, *Jour. de Physique I*, 5, 85-96 (1995)
67. 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).
68. 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).
69. L.Accardi, V.Mastropietro, “Uniqueness of the prices in incomplete markets”, *Chubu forum for math. sci.*,27-38, (1998)
70. 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)

### III. PROCEEDINGS

71. V.Mastropietro: ”Ising models, Universality and the non renormalization of the quatum anomalies” *XVI<sup>0</sup> International Conference of Mathematical Physics*, World Scientific (to appear)
72. V.Mastropietro: “Correlation in quantum chain models”, *XIII<sup>0</sup> International Conference of Mathematical Physics*, ed. Fokas et al, World Scientific (2001)

73. 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)
74. V.Mastropietro: "Correlations in quantum chain models and vertex models", *Int. Jour. Mod. Phys.* 16,11 1875-1888 (2001)
75. 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).
76. V.Mastropietro: "Stochastic limit for interacting fermions", "New Perspectives in the Physics of Mesoscopic Systems" ,World Scientific, (1997).

#### IV. PREPRINTS

77. A.Giuliani, V.Mastropietro, M.Porta: Renormalization Group for an effective model of graphene: anomalous dimension and lack of Lorentz invariance

#### V. ARTICLES FOR ENCYCLOPEDIA

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