

LIST OF PUBLICATIONS
of Maurizio Serva

Papers published in journals:

104. M. Serva, D. Vergni, D. Volchenkov and A. Vulpiani, *Recovering geography from a matrix of genetic distances*. Europhysics Letters **118**, (2017), 48003 (7 pages)
103. M. Serva, D. Vergni and A. Vulpiani, *Linear and anomalous front propagation in systems with non-Gaussian diffusion: The importance of tails*. Physical Review E **94**, (2016), 012141, (6 pages).
102. F. Petroni and M. Serva, *Observability of market daily volatility*. Physica A **444**, (2016), 838-842.
101. M. Serva, *A stochastic model for the interbreeding of two populations continuously sharing the same habitat*. Bulletin of Mathematical Biology **77**, (2015), 2354-2365.
100. M. L. de Almeida, E. L. Albuquerque, U. L. Fulco and M. Serva, *A percolation system with extremely long range connections and node dilution*. Physica A **416**, (2014), 273-278.
99. M. Serva, *Asymptotic properties of a bold random walk*. Physical Review E **90**, (2014), 022121, (4 pages).
98. M. Serva, *Exactly solvable tight-binding model on the RAN: fractal energy spectrum and Bose-Einstein condensation*. Journal of Statistical Mechanics: Theory and Experiment (2014), P08018, (19 pages).
97. I.M.N de Oliveira, F.A.B.F de Moura, M. L. Lyra and M. Serva, *Bose-Einstein condensation in diamond Hierarchical lattices*, Physical Review E **89**, (2014), 052133, (7 pages).
96. J. F. Fontanari and M. Serva, *Effect of migration in a diffusion model for template coexistence in protocells*. Bulletin of Mathematical Biology **76**, (2014), 654-672.
95. M. B. da Silva, P. C. Da Silva, A. Macedo-Filho, M. L. Lyra, E. L. Albuquerque, M. Serva and U. L. Fulco, *Non-universality of the absorbing-state phase-transition in a linear chain with power-law diluted long-range connections*. Physica A **404**, (2014), 271-278.
94. J. F. Fontanari and M. Serva, *Nonlinear group survival in Kimura's model for the evolution of altruism*. Mathematical Biosciences **249**, (2014), 18-26.
93. M. Serva, U. L. Fulco and E. L. Albuquerque, *Exact solutions and infinite-order phase transitions for a general class of Ising models on the regularized Apollonian network*. Journal of Statistical Mechanics: Theory and Experiment, (2014), P01010, (23 pages).
92. M. Serva, *Scaling behavior for random walks with memory of the largest distance from the origin*. Physical Review E **88**, (2013), 052141, (6 pages).
91. M. Serva, U. L. Fulco and E. L. Albuquerque, *Ising models on the regularized Apollonian network*. Physical Review E **88**, (2013), 042823 (5 pages).
90. M. Serva, F. Petroni, D. Volchenkov and S. Wichmann, *From Indonesia to Madagascar: in search of the origins of the Malagasy language*. Indian Ocean Review of Science and Technology (2013), 1, (13 pages).
89. I. N. de Oliveira, T. B. dos Santos, F. A. B. F. de Moura, M. L. Lyra and M. Serva, *Critical behavior of the ideal-gas Bose-Einstein condensation in the Apollonian network*. Physical Review E **88**, (2013), 022139, (7 pages).
88. J. F. Fontanari and M. Serva, *Solvable model for template coexistence in protocells*. Europhysics Letters **101**, (2013), 38006, (6 pages).
87. L. F. da Silva, R. N. Costa Filho, A. R. Cunha, A. Macedo-Filho, M. Serva, U. L. Fulco and E. L. Albuquerque, *Critical properties of the SIS model dynamics on the Apollonian network*. Journal of Statistical Mechanics: Theory and Experiment, (2013), P05003, (12 pages).
86. M. B. da Silva, A. Macedo-Filho, E. L. Albuquerque, M. Serva, M. L. Lyra and U. L. Fulco, *Critical Properties of a Super-diffusive Epidemic Process*. Physical Review E **87**, (2013), 062108, (6 pages).

85. M. Serva, F. Petroni, D. Volchenkov and S. Wichmann, *Malagasy dialects and the peopling of Madagascar*. Journal of the Royal Society Interface **9**, (2012), 54-67.
84. M. Serva, *The settlement of Madagascar: what dialects and languages can tell us*. PLoS ONE **7(2)**, (2012), e30666, (8 pages).
83. A. G. M. Neves and M. Serva, *Extremely rare interbreeding events can explain Neandertal DNA in living humans*. PLoS ONE **7(10)**, (2012), e47076, (10 pages).
82. F. Petroni and M. Serva, *Automated world stability and language phylogeny*. Journal of Quantitative Linguistics **18**, (2011), 53-62.
81. Ph. Blanchard, F. Petroni, M. Serva and D. Volchenkov, *Geometric representations of language taxonomies*. Computer Speech and Language **25**, (2011), 679-699.
80. M. Serva, *Exact and approximate solutions for the dilute Ising model*. Physica A **390**, (2011), 2443-2451.
79. F. Petroni and M. Serva, *Measures of lexical distance between languages*. Physica A **389**, (2010), 2280-2283.
78. F. Petroni and M. Serva, *Lexical evolution rates derived from automated stability measures*. Journal of Statistical Mechanics: Theory and Experiment, (2010), P03015, (10 pages).
77. M. Serva, *Magnetization densities as replica parameters: the dilute ferromagnet*. Physica A **389**, (2010), 2700-2707.
76. L. Prignano and M. Serva, *Genealogical trees from genetic distances*. The European Physical Journal B, Condensed Matter Physics **69**, (2009), 455-463.
75. F. Petroni, L. Prignano and M. Serva, *Family trees: languages and genetics*. Markov Processes and Related Fields **15**, (2009), 417-440.
74. M. Serva and F. Petroni, *Indo-European languages tree by Levenshtein distance*. Europhysics Letters **81**, (2008), 68005 (5 pages).
73. C. M. Nascimento, H. B. N. Júnior, H. D. Jennings, M. Serva, Iram Gleria and G. M. Viswanathan, *Multifractality and heteroscedastic dynamics: An application to time series analysis*. Europhysics Letters **81**, (2008), 18002 (4 pages).
72. F. Petroni and M. Serva, *Language distance and tree reconstruction*. Journal of Statistical Mechanics: Theory and Experiment, (2008), P08012, (15 pages).
71. A. Figueiredo, R. Matsushita, S. daSilva, M. Serva, G. M. Viswanathan, C. Nascimento and I. M. Glèria, *The Lévy sections theorem: An application to econophysics*. Physica A **386**, (2007), 756-759.
70. H.B. Nascimento Jr., U.L. Fulco, M L. Lyra, M. Serva and G.M. Viswanathan, *Porque as bolsas de valores quebram: a origem das caudas grossas nas distribuições de retornos - Why stock markets crash: the origin of fat tailed distributions of returns*. Revista Brasileira de Ensino da Física **29**, (2007), 341-346.
69. M. Serva, *Mitochondrial DNA replacement versus nuclear DNA persistence*. Journal of Statistical Mechanics: Theory and Experiment, (2006), P10013, (8 pages).
68. M. Serva, U. L. Fulco, I. M. Glèria, M. L. Lyra, F. Petroni and G. M. Viswanathan, *A Markov model of financial returns*. Physica A **363**, (2006), 393-403.
67. F. Petroni and M. Serva, *Investment strategies and hidden variables*. The European Physical Journal B, Condensed Matter Physics **51**, (2006), 601-608.
66. M. Serva, *On the genealogy of populations: trees, branches and offspring*. Journal of Statistical Mechanics: Theory and Experiment, (2005), P07011, (19 pages).
65. L. Berardi and M. Serva, *Time and foreign exchange markets*. Physica A **353**, (2005), 403-412.
64. M. Serva, *Lack of self averaging in family trees*. Physica A **332**, (2004), 387-393.
63. F. Petroni and M. Serva, *Real prices from spot foreign exchange market*. Physica A **344**, (2004), 194-197.

62. U. L. Fulco, M. L. Lyra, F. Petroni, M. Serva and G. M. Viswanathan, *A stochastic model for multifractal behavior of stock prices*. International Journal of Modern Physics B **18**, (2004), 681-689.
61. F. Petroni and M. Serva, *Spot foreign exchange market and time series*. The European Physical Journal B, Condensed Matter Physics **34**, (2003), 495-500.
60. G. M. Viswanathan, U. L. Fulco, M. L. Lyra and M. Serva, *The origin of fat-tailed distributions in financial time series*. Physica A **329**, (2003), 273-280.
59. R. Baviera, M. Pasquini, J. Raboanary and M. Serva, *Moving averages and price dynamics*. International Journal of Theoretical and Applied Finance **5**, (2002), 575-583.
58. R. Baviera, M. Pasquini, M. Serva, D. Vergni and A. Vulpiani, *Antipersistent Markov behaviour in foreign exchange markets*. Physica A **312**, (2002), 565-576.
57. R. Baviera, M. Pasquini, M. Serva, D. Vergni and A. Vulpiani, *Correlations and multi-affinity in high frequency financial datasets*. Physica A **300**, (2001), 551-557.
56. R. Baviera, M. Pasquini, M. Serva, D. Vergni and A. Vulpiani, *Forecast in foreign exchange markets*. The European Physical Journal B, Condensed Matter Physics **20**, (2001) 473-479.
55. M. Serva, *Random dynamical systems, entropies and information*. Physica A **290**, (2001), 243-250.
54. M. Pasquini and M. Serva, *Macroscopically frustrated Ising model*. Physical Review E **63**, (2001), 56109-56114.
53. E. Aurell, R. Baviera, O. Hammarlid, M. Serva and A. Vulpiani, *A general methodology to price and hedge derivatives in incomplete markets*. International Journal of Theoretical and Applied Finance **3**, (2000), 1-24.
52. M. Pasquini and M. Serva, *Indeterminacy in foreign exchange markets*. Physica A **277**, (2000), 228-238.
51. E. Aurell, R. Baviera, O. Hammarlid, M. Serva and A. Vulpiani, *Growth optimal investment and pricing of derivatives*. Physica A **280**, (2000), 505-521.
50. M. Pasquini and M. Serva, *Clustering of volatility as a multiscale phenomenon*. The European Physical Journal B, Condensed Matter Physics **16**, (2000), 195-201.
49. Ph. Blanchard, M. Pasquini and M. Serva, *Effective localization induced by noise and non linearity*. Physica D **141**, (2000), 214-220.
48. M. Pasquini and M. Serva, *Multiscale behaviour of volatility autocorrelations in a financial market*. Economics Letters, **65**, (1999), 275-279.
47. M. Serva, *Optimal lag in dynamical investments*. International Journal of Theoretical and Applied Finance **2**, (1999), 471-481.
46. M. Pasquini and M. Serva, *Multiscaling and clustering of volatility*. Physica A **269**, (1999), 140-147.
45. R. Baviera, M. Pasquini and M. Serva, *Cluster approximation for Ising spin glasses*. Journal de Physique IV **8**, (1998), 75-79.
44. V. Loreto, M. Serva and A. Vulpiani, *On the concept of complexity of random dynamical systems*. International Journal of Modern Physics B **12**, (1998), 225-243.
43. R. Baviera, M. Pasquini and M. Serva, *A variational approach to Ising spin glasses in finite dimensions*. Journal of Physics A: Mathematical and General **31**, (1998), 4127-4140.
42. M. Serva, *2d Ising model with layers of quenched spins*. Journal of Statistical Physics **91**, (1998), 31-45.
41. R. Baviera, M. Pasquini, M. Serva and A. Vulpiani, *Optimal strategies for prudent investors*. International Journal of Theoretical and Applied Finance **1**, (1998), 473-486.
40. M. Pasquini and M. Serva, *Two-dimensional frustrated Ising model with four phases*. Physical Review E **56**, (1997), 2751-2756.
39. M. Serva, *Exact solution of a two-dimensional random Ising model*. Physical Review E **56**, (1997), R2339-R2342.

38. R. Donato, L. Peliti and M. Serva, *The selection of altruistic behavior*. Theory in Biosciences/Theorie in den Biowissenschaften **116**, (1997), 309-320.
37. M. Serva, G. Paladin and J. Raboanary, *Mean field solution of the random Ising model on the dual lattice*. Physical Review E **52**, (1996) R9-R12.
36. G. Paladin and M. Serva, *Bethe-Peierls approximation for the 2d random Ising model*. Journal of Physics A: Mathematical and General **29**, (1996) 1381-1395.
35. G. Paladin and M. Serva, *Beyond the mean field approximation for the spin glasses*. Physical Review E **54**, (1996) 4637-4643.
34. Ph. Blanchard and M. Serva, *Reply to "Comment on "Repeated measurements in stochastic mechanics" "*. Physical Review D **51**, (1995) 3132-3134.
33. G. Paladin, M. Pasquini and M. Serva, *Constrained annealing for spin glasses*. Journal de Physique I **5**, (1995) 337-354.
32. M. Pasquini, G. Paladin and M. Serva, *Sequence of constrained annealed averages for one-dimensional disordered systems*. Physical Review E **51**, (1995) 2006-2012.
31. M. Pasquini, G. Paladin and M. Serva, *Rigorous bounds of the Lyapunov exponents of the one dimensional random Ising model*. Journal of Statistical Physics **80**, (1995) 357-373.
30. S. Scarlatti, M. Serva and M. Pasquini, *Large deviations for Ising spin glasses with constrained disorder*. Journal of Statistical Physics **80**, (1995) 337-356.
29. G. Paladin, M. Serva and A. Vulpiani, *Complexity in dynamical systems with noise*. Physical Review Letters **74**, (1995) 66-69.
28. L. Chiatti, M. Cini and M. Serva, *Is macroscopic quantum coherence incompatible with macroscopic realism?* Il Nuovo Cimento B **110**, (1995), 585-592.
27. G. Paladin, M. Pasquini and M. Serva, *Constrained annealing for systems with quenched disorder*. International Journal of Modern Physics B **9**, (1995) 399-467.
26. A. Crisanti, G. Paladin, M. Serva and A. Vulpiani, *Products of random matrices for disordered systems*. Physical Review E **49**, (1994) R953-R956.
25. Ph. Blanchard, G. Bolz, M. Cini, G.F. De Angelis and M. Serva, *Localization stabilized by noise*. Journal of Statistical Physics **75**, (1994) 749-755.
24. A. Crisanti, M. Falcioni, G. Paladin, M. Serva and A. Vulpiani, *Complexity in quantum systems*. Physical Review E **50**, (1994) 138-144.
23. G. Paladin, M. Pasquini and M. Serva, *Ferrimagnetism in a disordered Ising model*. Journal de Physique I **4**, (1994) 1597-1617.
22. M. Serva and G. Paladin, *Gibbs thermodynamic potentials for disordered systems*. Physical Review Letters **70**, (1993) 105-108.
21. A. Crisanti, G. Paladin, M. Serva and A. Vulpiani, *Random transfer matrices for the overlap in disordered systems*. Physical Review Letters **71**, (1993) 789-792.
20. A. Crisanti, G. Paladin, M. Serva and A. Vulpiani, *Lack of self-averaging in weakly disordered one dimensional systems*. Journal de Physique I **3**, (1993) 1993-2006.
19. G. F. De Angelis and M. Serva, *Imaginary-time path integrals from Klein-Gordon equation*. Europhysics Letters **18**, (1992) 477-482.
18. G. F. De Angelis and M. Serva, *Brownian path integrals from Dirac equation: a probabilistic approach to the Foldy-Wouthuysen transformation*. Journal of Physics A: Mathematical and General **25**, (1992) 6539-6550.
17. M. Cini and M. Serva, *Phase space representation of quantum mechanics in terms of coherent states*. Il Nuovo Cimento B **107**, (1992) 825-833.

16. G. Paladin and M. Serva, *Analytic solution of the random Ising model in one dimension*. Physical Review Letters **69**, (1992) 706-709.
15. M. Cini and M. Serva, *Measurement in quantum mechanics and classical statistical mechanics*. Physics Letters A **167**, (1992) 319-325.
14. G. F. De Angelis, A. Rinaldi and M. Serva, *Imaginary-time path integral for a relativistic spin 1/2 particle in a magnetic field*. Europhysics Letters **14**, (1991) 95-100.
13. M. Serva and L. Peliti, *A statistical model of an evolving population with sexual reproduction*. Journal of Physics A: Mathematical and General **24**, (1991) L705-L709.
12. M. Serva, *Hamiltonian semigroups associated to boson's systems: a probabilistic approach*. Journal of Physics A: Mathematical and General **23**, (1990) 863-870.
11. R. Marra and M. Serva, *Variational principles for a relativistic stochastic mechanics*. Annales de l'Institut Henri Poincaré, Physique théorique **53**, (1990) 97-108.
10. M. Cini and M. Serva, *Where is an object before we look at it?* Foundation of Physics Letters **3**, (1990) 129-151.
9. G. F. De Angelis and M. Serva, *Jump processes and diffusions in relativistic stochastic mechanics*. Annales de l'Institut Henri Poincaré, Physique théorique **53**, (1990) 301-317.
8. G. F. De Angelis and M. Serva, *On the relativistic Feynman-Kac-Ito formula*. Journal of Physics A: Mathematical and General **23**, (1990) L965-L968.
7. Y.-C. Zhang, M. Serva and M. Policarpov, *Diffusion reproduction processes*. Journal of Statistical Physics **58**, (1990) 849-861.
6. M. Serva, *Relativistic stochastic processes associated to Klein-Gordon equation*. Annales de l'Institut Henri Poincaré, Physique théorique **49**, (1988) 415-432.
5. M. Serva, *Probabilistic solutions of generalized birth and death equations and applications to field theory*. Journal of Physics A: Mathematical and General **20**, (1987) 435-446.
4. M. Cini and M. Serva, *Stochastic theory of emission and absorption of quanta*. Journal of Physics A: Mathematical and General **19**, (1986) 1163-1177.
3. G. F. De Angelis, G. Jona-Lasinio, M. Serva and N. Zanghi, *Stochastic mechanics of a Dirac particle in two space-time dimensions*. Journal of Physics A: Mathematical and General **19**, (1986) 865-871.
2. Ph. Blanchard, S. Golin and M. Serva, *Repeated measurements in stochastic mechanics*. Physical Review D **34**, (1986) 3732-3738.
1. M. Serva, *Elastic scattering in stochastic mechanics*. Lettere al Nuovo Cimento **41**, (1984) 198-202.

Popularization and papers in volume:

6. M. Serva, *Le origini del popolo malgascio, alcune certezze e qualche mistero*. In *Maddmaths! Matematica Divulgazione Didattica*, (2017), <http://maddmaths.simai.eu/divulgazione/focus/popolo-malgascio/>, (4 pages).
5. F. Petroni, M. Serva and D. Volchenkov, *Levenstein's distance for measuring lexical evolution rates*. In *Nonlinear Dynamics, New Directions: Models and Applications*, Series: Nonlinear Systems and Complexity, edited by H. González-Aguilar and E. Ugalde, (Springer, New York, 2015), Vol. 12, 215-240.
4. E. Aurell, R. Baviera, O. Hammarlid, M. Serva and A. Vulpiani, *Large bets, rare fluctuations and derivative pricing*. In *Off the wall*, monthly column of Numerix, (1998), Numerix LLC, www.numerix.com, (5 pages).
3. M. Serva, *Traiettorie stocastiche*. In *Enciclopedia delle Scienze Fisiche*, Istituto della Enciclopedia Italiana, G. Treccani. Vol. VI (1995) 265-271.
2. G. F. De Angelis and M. Serva, *Path integrals in relativistic quantum mechanics*. In *Quantum Probability and related topics*, edited by L. Accardi, QP-PQ: Quantum Probability and White Noise Analysis **9**, (1994) 159-188.
1. Ph. Blanchard, M. Cini and M. Serva, *The measurement problem in the stochastic formulation of quantum mechanics*. In *Ideas and methods in quantum and statistical physics. In memory of Raphael Höegh-Krohn*, edited by S. Albeverio *et al.* (Cambridge University Press, 1992), **2**, 149-171.

Conference proceedings:

12. M. Serva, *The origins of the Malagasy people, some certainties and a few mysteries - As origens do povo malgaxe, algumas certezas e vários mistérios*. IEAT Grande Conferência, Instituto de Estudos Avançados Transdisciplinares, <https://www.ufmg.br/ieat/>, (Belo Horizonte, 2017), (13 pages).
11. F. Petroni, M. Serva and D. Volchenkov, *Unraveling the tangles of language evolution*. In *Chaos, Complexity and Transport*, (Marseille 2011) edited by X. Leoncini and M. Leonetti, (World Scientific, 2012), 230-260.
10. M. Serva, Ph. Blanchard, E. W. Holman, F. Petroni, D. Volchenkov and S. Wichmann, *The phylogeny of Malagasy dialects*. In *Cognitive modeling in linguistics*, (Dubrovnik 2010). Text Processing and Cognitive Technologies **19**, edited by V. Solovyev and V. Polyakov, (Kazan: KSU, 2010), 253-256.
9. M. Serva, *Automated languages phylogeny from Levenshtein distance - Filogenia automatizada de línguas a partir da distância de Levenshtein*. International Conference, Visitas Internacionais, Instituto de Estudos Avançados Transdisciplinares, <https://www.ufmg.br/ieat/>, (Belo Horizonte, 2009), (10 pages).
8. Ph. Blanchard, M. Pasquini and M. Serva, *Classical limit: localization induced by noise*. In *The foundations of quantum mechanics. Historical analysis and open questions*, (Lecce 1998) edited by C. Garola and A. Rossi (World Scientific, Singapore, 2000), 63-72.
7. R. Baviera, M. Pasquini, M. Serva, D. Vergni and A. Vulpiani, *Weak efficiency and information in foreign exchange markets*. In *Finance and Turbulence*, (Aarhus 1999). Edited by O. E. Barndorff-Nielsen, B. J. Christensen, H. Bunzel and M. Sørensen. ISSN 1398-5981, MaPhySto Series: MPS-misc 1999-14, (1999), 5-25.
6. L. Chiatti, M. Cini and M. Serva, *Macroscopic quantum coherence as a test of quantum mechanics*. In *The foundations of quantum mechanics. Historical analysis and open questions*, (Lecce 1993) edited by C. Garola and A. Rossi (Kluwer Academic Publishers, The Netherlands, 1995), 147-153.
5. G. F. De Angelis and M. Serva, *Relativistic quantum mechanics and path integral for Klein-Gordon equation*. In *The foundations of quantum mechanics. Historical analysis and open questions*, (Lecce 1993) edited by C. Garola and A. Rossi (Kluwer Academic Publishers, The Netherlands, 1995), 187-200.
4. M. Serva, *Processi di Bernstein e meccanica quantistica*. In *I fondamenti della meccanica quantistica. Analisi storica e problemi aperti*, (Camerino 1988) edited by G. Cattaneo and A. Rossi (EditEl, Commenda di Rende, 1991), 317-324.
3. G. Bolz and M. Serva, *Path integral over Poisson trajectories: analytical and numerical estimates of ground state energies*. In *Stochastic processes: physics and geometry*, (Ascona/Locarno 1988) edited by S. Albeverio et al. (World Scientific, Singapore, 1990), 197-206.
2. M. Cini and M. Serva, *State vector collapse as a classical statistical effect of measurement*. In *Quantum theory without reduction*, (Roma 1989) edited by M. Cini and J.-M. Levy-Leblond (A. Hilger, IOP Publishing Ltd. London, 1990), 103-121.
1. M. Cini and M. Serva, *Stochastic interpretation of emission and absorption of the quantum of action*. In *NATO Advanced Research Workshop on Fundamental aspects of quantum theory*, (Como 1985) edited by V. Gorini and A. Frigerio (Plenum Publishing Corporation, NY, 1986), 133-137.