

LIST OF PUBLICATIONS
of Maurizio Serva

Papers published in journals:

116. M. Serva, *Particles with constant speed and random velocity in 3+1 space-time: separation of the space variables.* Journal of Physics A: Mathematical and Theoretical, **57**, 295005 (16 pages), (2024).
115. M. Serva, *Constant speed random particles spontaneously confined on the surface of an expanding sphere.* Journal of Statistical Mechanics: Theory and Experiment, 053401 (15 pages), (2024).
114. M. Pasquini and M. Serva, *Gradual modifications and abrupt replacements: two stochastic lexical ingredients of language evolution.* Computational Linguistics **49**(2), 301-323, (2023).
113. M. Serva and M. Pasquini, *Linguistic clues suggest that the Indonesian colonizers directly sailed to Madagascar.* Language Sciences **93**, 101497 (11 pages), (2022).
112. M. Serva and M. Pasquini, *The Sabaki languages of Comoros.* Indian Ocean Review of Science and Technology, 1 (5 pages), (2021).
111. M. Serva and M. Pasquini, *Malagasy dialects in Mayotte.* EPL **133**, 68003 (7 pages), (2021).
110. M. Pasquini and M. Serva, *Stability of meanings versus rate of replacement of words: an experimental test.* Journal of Quantitative Linguistics **28**, 95-116, (2021).
109. M. Serva, *Brownian motion at the speed of light: a new Lorentz invariant family of processes.* Journal of Statistical Physics **182**, 59 (13 pages), (2021).
108. M. Serva and M. Pasquini, *Dialects of Madagascar.* PLoS ONE **5**(10), e0240170 (28 pages), (2020).
107. M. Serva, *Random motion of light-speed particles.* Journal of Statistical Physics **181**, 1603-1608, (2020).
106. M. Pasquini and M. Serva, *Horizontal transfers are a primary aspect of languages evolution.* EPL **125**, 38002 (9 pages), (2019).
105. M. Serva, D. Vergni and A. Vulpiani, *Diffusione e reazione: dal moto Browniano alla diffusione delle epidemie.* Rivista dell'Unione Matematica Italiana. Matematica, Cultura e Società **3**, 93-102, (2018).
104. M. Serva, D. Vergni, D. Volchenkov and A. Vulpiani, *Recovering geography from a matrix of genetic distances.* EPL **118**, 48003 (7 pages), (2017).
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**, 012141 (6 pages), (2016).
102. F. Petroni and M. Serva, *Observability of market daily volatility.* Physica A **444**, 838-842, (2016).
101. M. Serva, *A stochastic model for the interbreeding of two populations continuously sharing the same habitat.* Bulletin of Mathematical Biology **77**, 2354-2365, (2015).
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**, 273-278, (2014).
99. M. Serva, *Asymptotic properties of a bold random walk.* Physical Review E **90**, 022121 (4 pages), (2014).
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, P08018 (19 pages), (2014).
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**, 052133 (7 pages), (2014).
96. J. F. Fontanari and M. Serva, *Effect of migration in a diffusion model for template coexistence in protocells.* Bulletin of Mathematical Biology **76**, 654-672, (2014).

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**, 271-278, (2014).
94. J. F. Fontanari and M. Serva, *Nonlinear group survival in Kimura's model for the evolution of altruism*. *Mathematical Biosciences* **249**, 18-26, (2014).
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*, P01010 (23 pages), (2014).
92. M. Serva, *Scaling behavior for random walks with memory of the largest distance from the origin*. *Physical Review E* **88**, 052141 (6 pages), (2013).
91. M. Serva, U. L. Fulco and E. L. Albuquerque, *Ising models on the regularized apollonian network*. *Physical Review E* **88**, 042823 (5 pages), (2013).
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*, 1 (13 pages), (2013).
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**, 022139 (7 pages), (2013).
88. J. F. Fontanari and M. Serva, *Solvable model for template coexistence in protocells*. *EPL* **101**, 38006 (6 pages), (2013).
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*, P05003 (12 pages), (2013).
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84. M. Serva, *The settlement of Madagascar: what dialects and languages can tell us*. *PLoS ONE* **7(2)**, e30666 (8 pages), (2012).
83. A. G. M. Neves and M. Serva, *Extremely rare interbreeding events can explain Neandertal DNA in living humans*. *PLoS ONE* **7(10)**, e47076 (10 pages), (2012).
82. F. Petroni and M. Serva, *Automated world stability and language phylogeny*. *Journal of Quantitative Linguistics* **18**, 53-62, (2011).
81. Ph. Blanchard, F. Petroni, M. Serva and D. Volchenkov, *Geometric representations of language taxonomies*. *Computer Speech and Language* **25**, 679-699, (2011).
80. M. Serva, *Exact and approximate solutions for the dilute Ising model*. *Physica A* **390**, 2443-2451, (2011).
79. F. Petroni and M. Serva, *Measures of lexical distance between languages*. *Physica A* **389**, 2280-2283, (2010).
78. F. Petroni and M. Serva, *Lexical evolution rates derived from automated stability measures*. *Journal of Statistical Mechanics: Theory and Experiment*, P03015 (10 pages), (2010).
77. M. Serva, *Magnetization densities as replica parameters: the dilute ferromagnet*. *Physica A* **389**, 2700-2707, (2010).
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75. F. Petroni, L. Prignano and M. Serva, *Family trees: languages and genetics*. *Markov Processes and Related Fields* **15**, 417-440, (2009).

74. 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*. EPL **81**, 18002 (4 pages), (2008).
73. F. Petroni and M. Serva, *Language distance and tree reconstruction*. Journal of Statistical Mechanics: Theory and Experiment, P08012 (15 pages), (2008).
72. M. Serva and F. Petroni, *Indo-European languages tree by Levenshtein distance*. EPL **81**, 68005 (5 pages), (2008).
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**, 756-759, (2007).
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**, 341-346, (2007).
69. M. Serva, *Mitochondrial DNA replacement versus nuclear DNA persistence*. Journal of Statistical Mechanics: Theory and Experiment, P10013 (8 pages), (2006).
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**, 393-403, (2006).
67. F. Petroni and M. Serva, *Investment strategies and hidden variables*. The European Physical Journal B, Condensed Matter Physics **51**, 601-608, (2006).
66. M. Serva, *On the genealogy of populations: trees, branches and offspring*. Journal of Statistical Mechanics: Theory and Experiment, P07011 (19 pages), (2005).
65. L. Berardi and M. Serva, *Time and foreign exchange markets*. Physica A **353**, 403-412, (2005).
64. M. Serva, *Lack of self averaging in family trees*. Physica A **332**, 387-393, (2004).
63. F. Petroni and M. Serva, *Real prices from spot foreign exchange market*. Physica A **344**, 194-197, (2004).
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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**, 273-280, (2003).
59. R. Baviera, M. Pasquini, J. Raboanary and M. Serva, *Moving averages and price dynamics*. International Journal of Theoretical and Applied Finance **5**, 575-583, (2002).
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55. M. Serva, *Random dynamical systems, entropies and information*. Physica A **290**, 243-250, (2001).
54. M. Pasquini and M. Serva, *Macroscopically frustrated Ising model*. Physical Review E **63**, 56109-56114, (2001).
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49. Ph. Blanchard, M. Pasquini and M. Serva, *Effective localization induced by noise and non linearity*. Physica D **141**, 214-220, (2000).
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47. M. Serva, *Optimal lag in dynamical investments*. International Journal of Theoretical and Applied Finance **2**, 471-481, (1999).
46. M. Pasquini and M. Serva, *Multiscaling and clustering of volatility*. Physica A **269**, 140-147, (1999).
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35. G. Paladin and M. Serva, *Beyond the mean field approximation for the spin glasses*. Physical Review E **54**, 4637-4643, (1996).
34. Ph. Blanchard and M. Serva, *Reply to "Comment on "Repeated measurements in stochastic mechanics" "*. Physical Review D **51**, 3132-3134, (1995).
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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, Numerix LLC, www.numerix.com (5 pages), (1998).
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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**, 159-188, (1994).
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 Høegh-Krohn*, edited by S. Albeverio *et al.*, Cambridge University Press **2**, 149-171, (1992).

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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, (Belo Horizonte, 2016). <https://arxiv.org/pdf/1803.02197.pdf> (13 pages), (2018).
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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, 317-324, (1991).
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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, 133-137, (1986).

Textbooks:

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