

JUAN PABLO PAZ LIST OF PUBLISHED PAPERS
(scientometric data: h factor 49, more than 10500 citations)

1. Quantum amplifier in an tunable superconducting circuit N. Del Grosso, F.C. Lombardo, J.P. Paz and P.I. Villar Phys. Rev A (2021) submitted.
2. Classical and quantum correlations in thermal machines. M. Aguilar and J.P. Paz, Phys. Rev A in press (2021)
3. Entanglement in quantum thermal machines. M. Aguilar, N. Freitas and J.P. Paz, Phys. Rev. A102 062422 (2020)
4. "State dependent squeezing of a trapped ion: new method and applications", M. Drechsler, M.B. Farías, N. Freitas, C. Schmiegelow and J.P. Paz, Phys. Rev. A101 052331 (2020).
5. "Entanglement in quantum thermodynamics", M. Aguilar and J.P. Paz, Phys. Rev. Lett (2019) submitted.
6. "Cooling a quantum oscillator: A useful analogy to understand Laser cooling as a thermodynamical process", N. Freitas and J.P. Paz, Physical Review A 97 032104 (2018).
7. "Cooling to absolute zero: the unattainability principle", N. Freitas, R. Gallegos, L. Masanes and J.P. Paz, in "Thermodynamics in the quantum regime", Fund. Theories Phys, 195, Springer Nature Sw DOI 10.1007/978-3-319-99046-0_25 (2018).
8. "Fundamental limit for cooling by linear quantum refrigerators", N. Freitas and J.P. Paz, Phys Rev E 95, 012146 (2017) (commented in Scientific American, 2017).
9. "Using a quantum work meter to test non equilibrium fluctuation theorems", F. Cerisola, Y. Margalit, S. Machluf, A. Roncaglia, J.P. Paz and R. Folman, Nature Communications 8, 1241 (2017).
10. "On the origin of the third law of thermodynamics", N. Freitas, A. Masanes and J.P. Paz (2018) to appear in Lecture Notes in Physics (Springer, DE).
11. "Quantum work and the informational cost of projective measurements", S. Deffner, J.P. Paz and W.H. Zurek (2016) Phys Rev E 94, 010103 (Rapid Comm): arXiv: 1603.06509.
12. "Work measurement as a generalized quantum measurement", A. Roncaglia, F. Cerisola and J.P. Paz, Phys. Rev. Lett. 113, 250601 (2014), selected as editor's choice and commented in Physics APS.
13. "Measuring work and heat in ultracold quantum gases", G. De Chiara, A.J. Roncaglia and J.P. Paz, New J. Phys 17 (2015) 035004.
14. "Comments on General non Markovian Dynamics of open quantum systems", D. Mac Cutcheon, J.P. Paz and A. Roncaglia, Phys. Rev. Lett 116 030011 (2015).
15. "Analytic solution for heat flow through a general harmonic network", N. Freitas and J.P. Paz, Phys. Rev. E 90, 042128 (2014). Errata Phys Rev E 90, 042128 (2014).
16. "Manipulating transverse modes of photons for quantum cryptography", M. Luda, M. Larotonda, J.P. Paz and C. Schmiegelow, Phys. Rev. A A89, 042325 (2014)
17. "Heat transport through an ion cristal", N. Freitas, E. Martinez and J.P. Paz, Physica Scripta 91, 1 (2015).

18. "Dynamics and thermodynamics of linear quantum open systems", E. Martinez and J.P. Paz, Phys. Rev. Lett. 110, 130406 (2013).
19. "Selective and efficient quantum state tomography and its applications to quantum process tomography", A. Bendersky and J.P. Paz, Physical Review A 87, 012127 (2013).
20. "Chiral mediated entanglement in an Aharonov Bohm ring", B. Rizzo, L. Arrechea and J.P. Paz, Phys. Rev. B 85, 045442 (2012).
21. "Dynamics of Gaussian discord between two oscillators coupled with the same environment", N. Freitas and J.P. Paz, Phys. Rev. A 85, 032118 (2012).
22. "Selective and efficient quantum process tomography without ancilla", C. Schmiegelow, A. Bendersky, M. Larotonda and J.P. Paz, Phys. Rev. Lett. 107, 100502 (2011).
23. "Selective and efficient quantum process tomography with single photons", C. Schmiegelow, M. Larotonda and J.P. Paz, Phys. Rev. Lett. 104, 123601 (2010).
24. "Towards scalable tomography of quantum maps using twirling—based method s and information hierarchies", C. Lopez, A. Bendersky, J.P. Paz and D. Cory, Phys. Rev. A 81, 062113 (2010).
25. "Studying the different phases for the dynamics of entanglement in an ion trap", C. Cormick and J.P. Paz, Phys. Rev. A 81, 022306 (2010).
26. "Selective and efficient quantum process tomography", A. Bendersky, F. Pastawski, J.P. Paz, Phys. Rev. A 80, 032116 (2009).
27. "General theory of measurement with two copies of a quantum state", A. Bendersky, J.P. Paz and M. Terra Cunha, Phys. Rev. Lett. 103, 040404 (2009).
28. "Redundancy of total and quantum correlations in the course of decoherence", J.P. Paz and A. Roncaglia, Phys. Rev. A 80, 042111 (2009).
29. "Entanglement dynamics during decoherence", J.P. Paz and A. Roncaglia, Quant. Info. Comp 8, 535 (2009).
30. "Dynamical phases for the evolution of the entanglement between two oscillators coupled with the same environment", J.P. Paz and A.J. Roncaglia, Phys. Rev. A 79, 032102 (2009).
31. "Dynamics of the entanglement between two oscillators in the same environment", J.P. Paz and A. Roncaglia, Phys. Rev. Lett 100, 220401 (2008).
32. "Selective Efficient Estimation of the Parameters of a Quantum Process", A. Bendersky, F. Pastawski and J.P. Paz, Phys. Rev. Lett. 100, 190403 (2008).
33. "Phase space origin of purity and fidelity decay", D. Monteoliva and J.P. Paz; Phys. Rev. A (2008), submitted (AQ10398).
34. "Decoherence of Bell states by local interactions with a dynamic spin environment", C. Cormick and J.P. Paz, Phys. Rev. A 78, 012357 (2008).
35. "Decoherence induced by a dynamic spin environment: the universal regime", C. Cormick and J.P. Paz, Phys. Rev. A 77, 022317 (2008).
36. "Universal decoherence induced by an environmental quantum phase transition", F.M. Cucchietti, J.P. Paz and S. Fernández-Vidal, Phys. Rev. A 75, 032337 (2007).

37. "Signatures of non-locality in the first-order coherence of the scattered light", P. Cañizares, T. Görler, J.P. Paz, G. Morigi and W. Schleich, *Laser Physics* 17, 903-907 (2007).
38. "Gaussian decoherence and Gaussian echoes from spin environments", W.H. Zurek, F. Cucchietti and J.P. Paz, *Acta Physica Polonica B* 38, 1685 (2007).
39. "Interference in the discrete Wigner function", C. Cormick and J.P. Paz, *Phys. Rev. A* 74 062315 (2006).
40. "Simulating a quantum walk with classical optics", D. Francisco, C. Lemmi, J.P. Paz and S. Ledesma, *Phys. Rev. A* 74, 052327 (2006).
41. "Optical simulation of the quantum Hadamard operator", D. Francisco, C. Lemmi, J.P. Paz and S. Ledesma, *Optics Communications* 268, pp 340-345 (2006).
42. "Classicality in the discrete Wigner function", C. Cormick, E. Galvao, D. Gottesmann, J.P. Paz and A. Pittenger, *Phys. Rev. A* 73, 012301 (2006).
43. "Decoherence from spin environments", F. Cucchietti, J.P. Paz and W.H. Zurek, *Phys. Rev. A* 72, 052113 (2005).
44. "Decoherence induced by a chaotic environment: a quantum walker with a complex coin", L. Ermann, J.P. Paz and M. Saraceno, *Phys. Rev. A* 73, 012302 (2006).
45. "Qubits in phase space: Wigner function approach to quantum error correction and the mean king paradox", J. P. Paz, A. Roncaglia and M. Saraceno, *Phys. Rev. A* 72, 012309 (2005).
46. "Quantum algorithms for phase space tomography", J. P. Paz, A. J. Roncaglia and M. Saraceno, *Phys. Rev. A* 69, 032312 (2004).
47. "Decoherence and recoherence from vacuum fluctuations near a conducting plate", F. D. Mazzitelli, J. P. Paz and A. Villanueva, *Phys. Rev. A* 68, 062106 (2004).
48. "Optical simulation of quantum algorithms using programmable liquid crystal displays", G. Puentes, C. La Mela, S. Ledesma, C. Lemmi, J. P. Paz and M. Saraceno, *Phys. Rev. A* 69, 042319 (2004).
49. "Randomness in quantum computation", J. P. Paz, *Science* 302, 2076-2077 (2003).
50. "Phase-space approach to the study of decoherence in quantum walks", C. C. Lopez and J. P. Paz, *Phys. Rev. A* 68, 052305 (2003).
51. "Decoherence and the Loschmidt echo", F. M. Cucchietti, D. A. R. Dalvit, J. P. Paz and W. H. Zurek, *Phys. Rev. Lett.* 91, 210403 (2003).
52. "A Method for Modeling Decoherence on a Quantum Information Processor", G. Teklemariam, E. M. Fortunato, C. C. Lopez, J. Emerson, J. P. Paz, T. F. Havel and D. G. Cory, *Phys. Rev. A* 67, 062316 (2003).
53. "Testing integrability with a single bit of quantum information", D. Poulin, R. Laflamme, G.J. Milburn and J. P. Paz, *Phys. Rev. A* 68, 022302 (2003).
54. "A quantum gate array can be programmed to evaluate the expectation value of any operator", J. P. Paz and A. Roncaglia, *Phys. Rev. A* 68, 052316 (2003).
55. "Interpretation of tomography and spectroscopy as dual forms of quantum computation", C. Miquel, J. P. Paz, M. Saraceno, R. Laflamme, E. Knill and C. Negrevergne, *Nature* 418, 59-62 (2002).

56. "Quantum computers in phase space", C. Miquel, J. P. Paz and M. Saraceno, Phys. Rev. A 65, 062309 (2002).
57. "Decoherence for classically chaotic quantum maps", P. Bianucci, J. P. Paz and M. Saraceno, Phys. Rev. E 65, 046226 (2002).
58. "Phase-space representation of quantum teleportation", J. P. Paz, Phys. Rev. A 65, 062311 (2002).
59. "Discrete Wigner functions and the phase space representation of quantum computers", P. Bianucci, C. Miquel, J. P. Paz and M. Saraceno, Phys. Lett. A 299, 353-358 (2002).
60. "Decoherence for classically chaotic quantum systems: rate of entropy production and quantum-classical correspondence", D. Monteoliva and J. P. Paz, Phys. Rev. E 64, 05238 (2001).
61. "Environment engineering: protecting the quantum world", J P Paz, Nature 412, 869-870 (2001).
62. "Decoherence and the rate of entropy production for chaotic quantum systems", D. Monteoliva and J. P. Paz, Phys. Rev. Lett. 85 3373, (2000).
63. "Quantum limit of decoherence: Environment induced superselection of energy eigenstates", J. P. Paz and W. H. Zurek, Phys. Rev. Lett. 82, 5181 (1999).
64. "Continuous error correction", J. P. Paz and W. Zurek, Proc. Roy. Soc. London A 454, 355 (1998).
65. "Quantum computation with phase drift errors", C. Miquel, J.P. Paz and W. H. Zurek, Phys. Rev. Lett. 78, 3971 (1997).
66. "Deconstructing decoherence", J. Anglin, J. P. Paz and W. H. Zurek, Phys. Rev. A 55, 4041 (1997).
67. "Decoherence and initial correlations in quantum Brownian motion", L. Davila Romero and J. P. Paz, Phys. Rev. A 55, 4070 (1997).
68. "Perfect quantum error correction code", R. Laflamme, C. Miquel, J. P. Paz and W. H. Zurek, Phys. Rev. Lett. 77, 198 (1996).
69. "Dissipation and decoherence in mean field theory", S. Habib, Y. Kluger, E. Motolla and J. P. Paz, Phys. Rev. Lett. 76, 4660 (1996).
70. "Factoring in a dissipative quantum computer", C. Miquel, J. P. Paz and R. Perazzo, Phys. Rev. A 54, 2605 (1996).
71. "Quantum evolution of disoriented chiral condensates", Y. Kluger, F. Cooper, E. Motolla, J. P. Paz and A. Kovner, Nucl. Phys. A590, 581 (1995).
72. "Decoherence, recoherence and the black hole information paradox", J. Anglin, R. Laflamme, W. Zurek and J. P. Paz, Phys. Rev. D52, 2221 (1995).
73. "Quantum chaos, a decoherent definition", W. H. Zurek and J. P. Paz, Physica D83, 300 (1995).
74. "Non-equilibrium dynamics of disoriented chiral condensates", Y. Kluger, J. P. Paz, F. Cooper and E. Mottolla, Phys. Rev. D 51, 2377 (1995).
75. "Non-equilibrium quantum fields in the large N expansion", F. Cooper, S. Habib, Y. Kluger, E. Motolla, J. P. Paz and P. Anderson. Phys. Rev. D 50, 2848 (1994).

76. "Decoherence, chaos and the second law", W. H. Zurek and J. P. Paz, Phys. Rev. Lett. 72, 2508 (1994). See also the reply to comments by B. Chirikov and G. Casati in W.H. Zurek and J. P. Paz, Phys. Rev. Lett. 75, 351 (1995).
77. "Proposed test for temporal Bell inequalities", J. P. Paz and G. Mahler, Phys. Rev. Lett. 71, 3235 (1993).
78. "Environment--induced decoherence, classicality and the consistency of quantum histories", J. P. Paz and W. H. Zurek, Phys. Rev. D 48, 2728 (1993).
79. "Coherent states via decoherence", W H Zurek, S. Habib and J. P. Paz, Phys Rev Lett 70, 1187 (1993).
80. "Reduction of the wave packet: Preferred observable and decoherence time scale", J. P. Paz, S. Habib and W. H. Zurek, Phys Rev D 47, 488 (1993).
81. "Quantum Brownian motion in a general environment: II nonlinear coupling and perturbative approach", B. L. Hu, J. P. Paz and Y. Zhang, Phys Rev D 47, 1576 (1993).
82. "Quantum Brownian motion in a general environment: exact master equation with non-local dissipation and colored noise", B. L. Hu, J. P. Paz and Y. Zhang, Phys Rev D 45, 2843 (1992).
83. "Decoherence and backreaction in quantum cosmology: multidimensional minisuperspace examples", J. P. Paz and S. Sinha, Phys Rev D 45, 2823 (1992).
84. "Decoherence and backreaction: the origin of the semiclassical Einstein equations", J. P. Paz and S. Sinha, Phys Rev D 44, 1038 (1991).
85. "Anisotropy dissipation in the early universe: finite temperature effects reexamined", J. P. Paz, Phys Rev D 41, 1054 (1990).
86. "Dissipation during the oscillations around a true vacuum", J. P. Paz, Phys Rev D 42, 529 (1990).
87. "Reheating of the Universe and evolution of the inflaton", F. Mazzitelli, J. P. Paz and C. El Hasi, Phys Rev D 40, 955 (1989).
88. "Gaussian and 1/N approximations in semiclassical cosmology", F. Mazzitelli and J. P. Paz, Phys Rev D 39, 2234 (1989).
89. "Quantum effects near multidimensional black holes", V. P. Frolov, F. Mazzitelli and J. P. Paz, Phys Rev D 40, 948 (1989).
90. "Renormalized evolution equations for the backreaction problem with a selfinteracting scalar field", J. P. Paz and F. D. Mazzitelli, Phys Rev D 37, 2170 (1988).
91. "A simple form for the Gaussian equations in curved space time", F. D. Mazzitelli and J. P. Paz, Phys Rev D 37, 3525 (1988).
92. "On the Dirac equation in anisotropic backgrounds", M. A. Castagnino, C. El Hasi, F. Mazzitelli and J. P. Paz, Phys Lett A 128, 125 (1988).
93. "Cauchy data and Hadamard singularities in time dependent backgrounds", F. D. Mazzitelli, J. P. Paz and M. A. Castagnino, Phys Rev D 36, 2994 (1987).
94. "Graviton and topology contributions to selfconsistent cosmology", M. A. Castagnino, J. P. Paz and N. Sanchez, Phys Lett B 193, 13 (1987) (CERN preprint, TH-4691/87).

95. "Fermions between moving boundaries", M. A. Castagnino, F. D. Mazzitelli and J. P. Paz, Phys Lett B 189, 132 (1987).
96. "Hadamard and minimal renormalizations", M. A. Castagnino, E. Gunzig, P. Nardone and J. P. Paz, Phys Rev D 34, 3698 (1986).
97. "De Sitter self-consistent cosmologies for Weinberg-type fields", M. A. Castagnino, D. Harari and J. P. Paz, Class Quantum Grav 3, 569 (1986).
98. "On the instability of the Minkowski space", M. A. Castagnino and J. P. Paz, Phys Lett B 164, 274 (1985).

BOOKS

- "La física cuántica", Editorial Siglo XXI, Colección Ciencia Que Ladra (2017), ISBN 9789876297264

BOOK CHAPTERS

- "Environment induced Decoherence and the transition from quantum to classical", J. P. Paz and W. H. Zurek, (2000). In "Coherent matter waves, Les Houches Session LXXII", edited by R. Kaiser, C. Westbrook and F. David, EDP Sciences, Springer Verlag (Berlin) (2001) 533-614.
- "Using qubits to learn about it", J. P. Paz (2002) in "Science and ultimate reality", a book edited to honor J. A. Wheeler. Cambridge University Press (2004). Authors of the chapters of this book were selected by an international committee and awarded with a prize of ten thousand dollars by the Templeton Foundation and the Metanexus Institute.
- "Environment-induced decoherence and the transition from quantum to classical", J. P. Paz and W. H. Zurek, LECTURE NOTES IN PHYSICS; 2002; v.587, p.77-148

PAPERS FOR GENERAL PUBLIC

- "Del átomo a la bomba (una breve historia para entender mejor la obra Copenhague)", J. P. Paz, Teatro (Revista del Complejo Teatral de Buenos Aires), Nro. 64, 40-44 (2002).
- "Einstein contra la mecánica cuántica: el azar y la ignorancia", J. P. Paz (2007); publicado en "El Universo de Einstein" editado por A. Gangui (EUDEBA).
- "Dos cazadores galardonados", J. P. Paz, Ciencia Hoy, 107, 25-27 (2012)
- "La física en la próxima década", J. P. Paz, Ciencia Hoy, 125, 39-43 (2013).