

# Jiannis K Pachos

## List of Publications by Year in descending order

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Version: 2024-02-01

73  
papers

2,585  
citations

218381

26  
h-index

205818

48  
g-index

74  
all docs

74  
docs citations

74  
times ranked

1809  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Geometric Phases and Criticality in Spin-Chain Systems. Physical Review Letters, 2005, 95, 157203.   | 2.9  | 205       |
| 2  | Three-Spin Interactions in Optical Lattices and Criticality in Cluster Hamiltonians. Physical Review Letters, 2004, 93, 056402.                            | 2.9  | 190       |
| 3  | Quantum Computation with Trapped Ions in an Optical Cavity. Physical Review Letters, 2002, 89, 187903.   | 2.9  | 189       |
| 4  | A Short Introduction to Topological Quantum Computation. SciPost Physics, 2017, 3, .   | 1.5  | 142       |
| 5  | Quantum memories at finite temperature. Reviews of Modern Physics, 2016, 88, .   | 16.4 | 131       |
| 6  | Quantum Computation with a One-Dimensional Optical Lattice. Physical Review Letters, 2003, 91, 107902.   | 2.9  | 127       |
| 7  | Cold Atom Simulation of Interacting Relativistic Quantum Field Theories. Physical Review Letters, 2010, 105, 190403.                                       | 2.9  | 110       |
| 8  | QUANTUM HOLONOMIES FOR QUANTUM COMPUTING. International Journal of Modern Physics B, 2001, 15, 1257-1285.  | 1.0  | 100       |
| 9  | Effective three-body interactions in triangular optical lattices. Physical Review A, 2004, 70, .   | 1.0  | 55        |
| 10 | Why should anyone care about computing with anyons?. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 1-24. | 1.0  | 54        |
| 11 | Topological liquid nucleation induced by vortex-vortex interactions in Kitaev's honeycomb model. Physical Review B, 2012, 86, .                            | 1.1  | 54        |
| 12 | Bringing Order through Disorder: Localization of Errors in Topological Quantum Memories. Physical Review Letters, 2011, 107, 030503.                       | 2.9  | 51        |
| 13 | Spectrum of the non-abelian phase in Kitaev's honeycomb lattice model. Annals of Physics, 2008, 323, 2286-2310.  | 1.0  | 50        |
| 14 | The wavefunction of an anyon. Annals of Physics, 2007, 322, 1254-1264.   | 1.0  | 49        |
| 15 | Simulating the exchange of Majorana zero modes with a photonic system. Nature Communications, 2016, 7, 13194.  | 5.8  | 47        |
| 16 | Manifestations of topological effects in graphene. Contemporary Physics, 2009, 50, 375-389.  | 0.8  | 43        |
| 17 | Journeys from quantum optics to quantum technology. Progress in Quantum Electronics, 2017, 54, 19-45.  | 3.5  | 41        |
| 18 | Decoherence-free dynamical and geometrical entangling phase gates. Physical Review A, 2004, 69, .  | 1.0  | 36        |

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 19 | Graph-state preparation and quantum computation with global addressing of optical lattices. <i>Physical Review A</i> , 2006, 73, .                                     | 1.0 | 36        |
| 20 | Topological Quantum Liquids with Long-Range Couplings. <i>Physical Review Letters</i> , 2017, 118, 267002.   | 2.9 | 36        |
| 21 | Incoherent dynamics in the toric code subject to disorder. <i>Physical Review A</i> , 2012, 85, .  | 1.0 | 30        |
| 22 | Quantum computation in optical lattices via global laser addressing. <i>New Journal of Physics</i> , 2004, 6, 126-126.   | 1.2 | 29        |
| 23 | Non-Abelian statistics as a Berry phase in exactly solvable models. <i>New Journal of Physics</i> , 2009, 11, 093027.  | 1.2 | 27        |
| 24 | Topological phase transitions driven by gauge fields in an exactly solvable model. <i>Physical Review B</i> , 2010, 81, .  | 1.1 | 27        |
| 25 | Universal quantum computation by holonomic and nonlocal gates with imperfections. <i>Physical Review A</i> , 2001, 64, .   | 1.0 | 26        |
| 26 | Chiral phase from three-spin interactions in an optical lattice. <i>Physical Review A</i> , 2005, 72, .  | 1.0 | 26        |
| 27 | Geometric phases and criticality in spin systems. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2006, 364, 3463-3476. | 1.6 | 25        |
| 28 | Graphene with Geometrically Induced Vorticity. <i>Physical Review Letters</i> , 2008, 100, 156806.   | 2.9 | 23        |
| 29 | QUANTUM COMPUTATION WITH ABELIAN ANYONS ON THE HONEYCOMB LATTICE. <i>International Journal of Quantum Information</i> , 2006, 04, 947-954.                             | 0.6 | 22        |
| 30 | Optimal free descriptions of many-body theories. <i>Nature Communications</i> , 2017, 8, 14926.  | 5.8 | 21        |
| 31 | AN INDEX THEOREM FOR GRAPHENE. <i>International Journal of Modern Physics B</i> , 2007, 21, 5113-5120.   | 1.0 | 20        |
| 32 | Chiral entanglement in triangular lattice models. <i>Physical Review A</i> , 2008, 77, .   | 1.0 | 19        |
| 33 | Holographic correspondence in topological superconductors. <i>Annals of Physics</i> , 2016, 372, 175-181.  | 1.0 | 18        |
| 34 | A constructive algorithm for the Cartan decomposition of $SU(2N)$ . <i>Journal of Mathematical Physics</i> , 2005, 46, 082108.   | 0.5 | 17        |
| 35 | Entropic Barriers for Two-Dimensional Quantum Memories. <i>Physical Review Letters</i> , 2014, 112, 120503.  | 2.9 | 17        |
| 36 | Free-fermion descriptions of parafermion chains and string-net models. <i>Physical Review B</i> , 2018, 97, .  | 1.1 | 17        |



| #  | ARTICLE   | IF  | CITATIONS |
|----|---|-----|-----------|
| 55 | Interaction distance in the extended XXZ model. <i>Physical Review B</i> , 2019, 100, .   | 1.1 | 5         |
| 56 | Specific heat of 2D interacting Majorana fermions from holography. <i>Scientific Reports</i> , 2019, 9, 17308.  | 1.6 | 5         |
| 57 | THREE-SPIN INTERACTIONS AND ENTANGLEMENT IN OPTICAL LATTICES. <i>International Journal of Quantum Information</i> , 2006, 04, 541-549.                                      | 0.6 | 3         |
| 58 | Centrifugal deformations of the gravitational kink. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2009, 373, 2616-2619.                      | 0.9 | 3         |
| 59 | Induced Topological Phases at the Boundary of 3D Topological Superconductors. <i>Physical Review Letters</i> , 2015, 114, 016801.   | 2.9 | 3         |
| 60 | Nested defects on the boundary of topological superconductors. <i>Physical Review B</i> , 2016, 94, .   | 1.1 | 3         |
| 61 | Conformal energy currents on the edge of a topological superconductor. <i>Physical Review B</i> , 2017, 95, .   | 1.1 | 3         |
| 62 | Topological bulk states and their currents. <i>Physical Review B</i> , 2020, 102, .   | 1.1 | 3         |
| 63 | Topological Quantum Computation. <i>Lecture Notes in Computer Science</i> , 2013, , 150-179.  | 1.0 | 3         |
| 64 | Emergence of gaussianity in the thermodynamic limit of interacting fermions. <i>Physical Review B</i> , 2021, 104, .  | 1.1 | 3         |
| 65 | Conformally flat Kaluza-Klein spaces, pseudo-/para-complex space forms and generalized gravitational kinks. <i>Journal of Geometry and Physics</i> , 2009, 59, 1314-1325.   | 0.7 | 2         |
| 66 | Equivalence between vortices, twists, and chiral gauge fields in the Kitaev honeycomb lattice model. <i>Physical Review B</i> , 2020, 102, .                                | 1.1 | 2         |
| 67 | Efficiency of free auxiliary models in describing interacting fermions: From the Kohn-Sham model to the optimal entanglement model. <i>Physical Review B</i> , 2019, 100, . | 1.1 | 1         |
| 68 | Seeing topological edge and bulk currents in time-of-flight images. <i>Physical Review B</i> , 2020, 102, .   | 1.1 | 1         |
| 69 | Effective field theories for interacting boundaries of 3D topological crystalline insulators through bosonisation. <i>Scientific Reports</i> , 2020, 10, 21998.             | 1.6 | 1         |
| 70 | Conformal flatness, non-Abelian Kaluza-Klein reduction and quaternions. <i>Journal of Geometry and Physics</i> , 2012, 62, 344-351.   | 0.7 | 0         |
| 71 | Quantum Computation and Information: Multi-Particle Aspects. <i>Entropy</i> , 2016, 18, 339.  | 1.1 | 0         |
| 72 | Topological aspects of quantum information processing. <i>Texts and Readings in Physical Sciences</i> , 2017, , 471-500.  | 0.2 | 0         |

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 73 | Edge density of bulk states due to relativity. Physical Review B, 2021, 104, . | 1.1 | 0         |