

# Physics Mechanics

70Fxx

- [1] Marshall Hampton and Richard Moeckel, *Finiteness of stationary configurations of the four-vortex problem*, Trans. Amer. Math. Soc. **361** (2009), no. 3, 1317–1332.
- [2] Marshall Hampton and Manuele Santoprete, *Seven-body central configurations: A family of central configurations in the spatial seven-body problem*, Cel. Mec. Dynam. Astron **99** (2007), no. 4, 293–305.
- [3] I. Kotsireas and D. Lazard, *Central configurations of the 5-body problem with equal masses in three-dimensional space*, Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI) **258** (1999), no. Teor. Predst. Din. Sist. Komb. i Algoritm. Metody. 4, 292–317, 360–361. MR MR1755843 (2001b:70017)

# Quantum Theory

81Xxx except 81P68

- [1] Ingemar Bengtsson, Wojciech Bruzda, Asa Ericsson, Jan-Ake Larsson, Wojciech Tadej, and Karol Zyczkowski, *Mutually unbiased bases and Hadamard matrices of order six*, J. Math. Phys. **48** (2007), no. 052106, 1–21.
- [2] Markus Grassl, Martin Rötteler, and Thomas Beth, *Computing local invariants of quantum-bit systems*, Phys. Rev. A (3) **58** (1998), no. 3, 1833–1839. MR MR1643864 (99d:81026)
- [3] Dhagash B. Mehta, *Lattice vs. Continuum: Landau Gauge Fixing and 't Hooft-Polyakov Monopoles*, Phd thesis, University of Adelaide, 2010, pp. 1–149.
- [4] Joseph M. Renes, Robin Blume-Kohout, A. J. Scott, and Carlton M. Caves, *Symmetric informationally complete quantum measurements*, J. Math. Phys. **45** (2004), no. 6, 2171–2180. MR MR2059685 (2004m:81043)
- [5] H. E. Winkelnkemper, *AP theory II: Intrinsic 4D quantum YM theory with mass gap*, 2007.
- [6] Pawel Wocjan, *Efficient decoupling schemes with bounded controls based on Eulerian orthogonal arrays*, Phy. Rev. A. **73** (2006), no. 6, 7.

# Quantum Computation

81P68

- [1] Thomas Beth, Christopher Charnes, Markus Grassl, Gernot Alber, Aldo Delgado, and Michael Mussinger, *A new class of designs which protect against quantum jumps*, Des. Codes Cryptogr. **29** (2003), no. 1-3, 51–70. MR MR1993156 (2004i:94065)
- [2] Marcus Palmer da Silva, *Erasure thresholds for efficient linear optics quantum computation*, Master's thesis, University of Waterloo, 2004.
- [3] G. David Forney, Jr., Markus Grassl, and Saikat Guha, *Convolutional and tail-biting quantum error-correcting codes*, IEEE Trans. Inform. Theory **53** (2007), no. 3, 865–880. MR MR2302801
- [4] M. Grassl, Thomas Beth, and T. Pellizzari, *Codes for the quantum erasure channel*, Phys. Rev. A (3) **56** (1997), no. 1, 33–38. MR MR1459695 (98f:81044)
- [5] M. Grassl, Thomas Beth, and M. Rötteler, *Computing local invariants of quantum-bit systems*, Phys. Rev. A. **58** (1998), no. 3, 833–1839.
- [6] Markus Grassl, *On SIC-POVMs and MUBs in dimension 6*, 2004.
- [7] Markus Grassl, *Tomography of quantum states in small dimensions*, Proceedings of the Workshop on Discrete Tomography and its Applications (Amsterdam), Electron. Notes Discrete Math., vol. 20, Elsevier, 2005, pp. 151–164 (electronic). MR MR2301093
- [8] Russell John Higgs, *Nice error bases and Sylow subgroups*, IEEE Trans. Inform. Theory **54** (2008), no. 9, 4199–4207. MR MR2450777
- [9] Min-Hsiu Hsieh, Igor Devetak, and Todd Brun, *General entanglement-assisted quantum error-correcting codes*, Physical Review A (Atomic, Molecular, and Optical Physics) **76** (2007), no. 6, 062313.
- [10] Andreas Klappenecker and Martin Rötteler, *Beyond stabilizer codes I: Nice error bases*, IEEE Trans. Inform. Theory **48** (2002), no. 8, 2392–2395. MR MR1930299 (2003k:94055)

- [11] ———, *Unitary error bases: Constructions, equivalence, and applications*, Applied Algebra, Algebraic Algorithms and Error-correcting Codes (Toulouse, 2003), Lecture Notes in Comput. Sci., vol. 2643, Springer, Berlin, 2003, pp. 139–149. MR MR2042421 (2005c:94088)
- [12] ———, *On the structure of nonstabilizer Clifford codes*, Quantum Inf. Comput. **4** (2004), no. 2, 152–160. MR MR2065357 (2005h:94086)
- [13] Samuel J. Lomonaco, Jr. and Louis H. Kauffman, *Quantum hidden subgroup algorithms: A mathematical perspective*, Quantum Computation and Information (Washington, DC, 2000), Contemp. Math., vol. 305, Amer. Math. Soc., Providence, RI, 2002, pp. 139–202. MR MR1947336 (2004k:81097)
- [14] Jean-Gabriel Luque, Jean-Yves Thibon, and Frédéric Toumazet, *Unitary invariants of qubit systems*, Math. Structures Comput. Sci. **17** (2007), no. 6, 1133–1151. MR MR2372468
- [15] Gabriele Nebe, Eric M. Rains, and Neil J. A. Sloane, *Self-dual Codes and Invariant Theory*, Algorithms and Computation in Mathematics, vol. 17, Springer-Verlag, Berlin, 2006. MR MR2209183
- [16] Michel Planat, *Clifford group dipoles and the enactment of Weyl/Coxeter group  $W(E_8)$  by entangling gates*, 2009.
- [17] Michel Planat, Peter Levay, and Metod Saniga, *Balanced tripartite entanglement, the alternating group  $A_4$  and the Lie algebra  $sl(3, c) \oplus u(1)$* , 2009.
- [18] Thomas Schulte-Herbrüggen, Uwe Sander, and Robert Zeier, *Symmetry principles in quantum system theory of multi-qubit systems made simple*, Proceedings of the 4th International Symposium on Communications, Control and Signal Processing, ISCCSP 2010, Limassol, Cyprus, 3–5 March 2010, IEEE, 2010, pp. 1–5.
- [19] Thomas Schulte-Herbrüggen, Uwe Sander, , and Robert Zeier, *Symmetry principles in quantum system theory of multi-qubit systems made simple*, Communications, Control and Signal Processing, ISCCSP 2010. Proceedings of the 4th International Symposium, IEEE, 2010, pp. 1–5.
- [20] A. J. Scott and M. Grassl, *Symmetric informationally complete positive-operator-valued measures: A new computer study*, 2010, p. 042203.

- [21] Barbara M. Terhal, Isaac L. Chuang, David P. Di Vincenzo, Markus Grassl, and John A. Smolin, *Simulating quantum operations with mixed environments*, Phys. Rev **60** (1999), no. 2, 881–885. MR MR0000020
- [22] Pawel Wocjan, Martin Rötteler, Dominik Janzing, and Thomas Beth, *Universal simulation of Hamiltonians using a finite set of control operations*, Quantum Inf. Comput. **2** (2002), no. 2, 133–150. MR MR1910083 (2003e:81036)
- [23] Robert Michael Zeier, *Lie-theoretischer zugang zur erzeugung unitärer transformationen auf quantenrechnern*, Ph.D. thesis, Institut für Algorithmen und Kognitive Systeme, Universität Karlsruhe, 2006, p. 140.

# Statistical Mechanics

82Xxx

- [1] J. Buhler and Z. Reichstein, *Symmetric functions and the phase problem in crystallography*, Trans. Amer. Math. Soc. **357** (2005), no. 6, 2353–2377 (electronic). MR MR2140442
- [2] Bettina Eick and Bernd Souvignier, *Algorithms for crystallographic groups*, Int. J. Quantum. Chem **106** (2006), no. 1, 316–343.
- [3] Peter J. Forrester and Eric M. Rains, *Interrelationships between orthogonal, unitary and symplectic matrix ensembles*, Random matrix models and their applications, Math. Sci. Res. Inst. Publ., vol. 40, Cambridge Univ. Press, Cambridge, 2001, pp. 171–207. MR MR1842786 (2002h:82008)
- [4] S. Fritzsche, *Application of point-group symmetries in chemistry and physics: A computer-algebraic approach*, Int. J. Quantum. Chem **106** (2006), 98–129.
- [5] J. Opgenorth, W. Plesken, and T. Schulz, *Crystallographic algorithms and tables*, Acta Cryst. Sect. A **54** (1998), no. 5, 517–531. MR MR1645546 (99h:20082)
- [6] Craig A. Tracy, Larry Grove, and M. F. Newman, *Modular properties of the hard hexagon model*, J. Statist. Phys. **48** (1987), no. 3-4, 477–502. MR MR914893 (89b:82125)

# Relativity and Gravitation

- [1] J. S. Dowker and Peter Chang, *Analytic torsion on spherical factors and tessellations*.
- [2] Peter Lorimer, *Models for a finite universe*, *Internat. J. Theoret. Phys.* **41** (2002), no. 7, 1201–1274. MR MR1923298 (2003h:57020)
- [3] Francesco Dalla Piazza, *More on superstring chiral measures*, *Nuclear Physics B* **844** (2011), no. 3, 471–499.
- [4] A. A. Ungar, *Hyperbolic trigonometry in the Einstein relativistic velocity model of hyperbolic geometry*, *Comput. Math. Appl.* **40** (2000), no. 2-3, 313–332. MR MR1763628 (2001e:83005)
- [5] Abraham A. Ungar, *Beyond the Einstein Addition Law and its Gyroscopic Thomas Precession*, *Fundamental Theories of Physics*, vol. 117, Kluwer Academic Publishers Group, Dordrecht, 2001, The theory of gyrogroups and gyrovector spaces. MR MR1978122 (2004c:83006)
- [6] H.E. Winkelnkemper, *AP Theory III: Cone-like graded SUSY, Dynamic Dark Energy and the YM Millenium problem*, 2010.

# Geophysics

86-xx

- [1] Joseph L. Awange and Erik W. Grafarend, *Solving Algebraic Computational Problems in Geodesy and Geoinformatics*, Springer-Verlag, Berlin, 2005, The answer to modern challenges. MR MR2139870 (2006b:86022)
- [2] D. W. Vasco, *Intersections, ideals, and inversion*, *Inverse Problems* **15** (1999), no. 6, 1573–1602. MR MR1733217 (2000i:86026)