Publications List

1 Publications

1. Dalimil Mazáč
   Topological order, entanglement, and quantum memory at finite temperature
   http://arxiv.org/abs/1112.0947

2. Bruno Tomasello, Davide Rossini, A. H., Luigi Amico
   Quantum discord in a spin system with symmetry breaking
   http://arxiv.org/abs/1112.0361

3. A.H., S. Santra, and P. Zanardi
   Quantum entanglement in random physical states
   http://arxiv.org/abs/1109.4391

4. Francesco Caravelli, A.H., Fotini Markopoulou, Arnau Riera
   Trapped surfaces and emergent curved space in the Bose-Hubbard model
   http://arxiv.org/abs/1108.2013
   Citations: 3

5. Wonmin Son, Luigi Amico, Rosario Fazio, A.H., Saverio Pascazio, Vlatko Vedral
   Quantum phase transition between cluster and antiferromagnetic states
   Europhys. Lett. vol. **95**, 50001 (2011); http://arxiv.org/abs/1103.0251
   Citations: 5

6. B. Tomasello, L. Amico, A.H., D. Rossini
   Ground state factorization and correlations with broken symmetry
   Europhys. Lett. vol. **96**, 27002 (2011); http://arxiv.org/abs/1012.4270
   Citations: 7

7. A.H., Fotini Markopoulou
   Background independent condensed matter models for quantum gravity
   New Journal of Physics vol. **13**, 095006 (2011); http://arxiv.org/abs/1011.5754
   Citations: 5

8. Juho Häppölä, Gábor B. Halász, A.H.
   Revivals of a closed quantum system and Lieb-Robinson speed
   http://arxiv.org/abs/1011.0380
   Citations: 4

9. I. Prémont-Schwartz, A.H., I. Klich, F. Markopoulou-Kalamara
   Lieb-Robinson bounds for commutator-bounded operators
   Phys. Rev. A **81**, 040102(R) (2010); arXiv:0912.4544
   Citations: 4

10. A.H, Fotini Markopoulou, Seth Lloyd, Francesco Caravelli, Simone Severini, Klas Markstrom
    A quantum Bose-Hubbard model with evolving graph as toy model for emergent spacetime
    Phys. Rev. D **81**, 104032 (2010); arXiv:0911.5075
    Citations: 10

11. S. Flammia, A.H., T. Hughes, X.-G. Wen
    Topological Entanglement Rényi Entropy and Reduced Density Matrix Structure
    Phys. Rev. Lett. **103**, 261601 (2009); arxiv:0909.3305
    Citations: 22

12. D.I. Tsomokos, A. H., W. Zhang, S. Haas, R. Fazio
Title: Topological Order Following a Quantum Quench
Phys. Rev. A **80**, 060302(R) (2009); arXiv:0909.0752
Citations: 9

13. A.T. Rezakhani, W.-J. Kuo, A. H., D.A. Lidar, P. Zanardi
Quantum Adiabatic Brachistochrone
Phys. Rev. Lett. **103**, 080502 (2009), arXiv:0905.2376
also selected for publication in Virtual Journal of Quantum Information
Citations: 22

14. A.H., D. A. Lidar, S. Severini
Entanglement and area law with a fractal boundary
Phys. Rev. A **81**, 010102 (R) (2010) , arXiv:0903.4444
Citations: 0

15. A.H., C. Castelnovo, and C. Chamon
The toric-boson model: Toward a topological quantum memory at finite temperature
Phys. Rev. B **79** (Physical Review Editors Suggestions), 245122 (2009); arXiv:0812.4622
also selected for publication in Virtual Journal of Quantum Information
Citations: 15

16. D. Lidar, A. Rezakhani, A.H.
Adiabatic approximation with better than exponential accuracy for many-body systems and quantum computation
J. Math. Phys **50**, 102106 (2009); arXiv:0808.2697v2
also selected for publication in Virtual Journal of Quantum Information
Citations: 15

17. A.H, I. Prémont-Schwartz, S. Severini, F. Markopoulou-Kalamara
Lieb-Robinson Bounds and the speed of light from topological order
Phys. Rev. Lett. **102** , 017204 (2009); arXiv:0808.2495v2
also selected for publication in Virtual Journal of Quantum Information
Citations: 16

18. G. Campagnano, A.H., U. Weiss
Decoherence and Entanglement Dynamics of Coupled Qubits
Physics Letters A **374** (2010) pp. 416-423 (doi:10.1016/j.physleta.2009.10.081); arXiv:0807.1987v1
Citations: 3

19. A.H., T. Mansour and S. Severini
Diffusion on an Ising Chain with Kinks
Physics Letters A **373**, 2622 (2009); arXiv:0806.4812v1
Citations: 0

20. M. Arzano, A.H., and S. Severini
Hidden entanglement at the Planck scale: loss of unitarity and the information paradox
Modern Physics Letters A **25**, 437 (2010) arXiv:0806.2145v1
Citations: 9

21. D. Abasto, A.H. and P. Zanardi
Fidelity analysis of topological phase transitions
Phys. Rev. A **78**, 010301(R), (2008); arXiv:0803.2243
also selected for publication in Virtual Journal of Quantum Information
Citations: 28

22. A.H., W. Zhang, S. Haas, D. Lidar
Entanglement, fidelity and topological entropy in a quantum phase transition to topological order

Phys. Rev. B **77**, 155111 (2008); arXiv:0705.0026
also selected for publication in Virtual Journal of Quantum Information
Citations: 42

23. A.H., D. Lidar
Adiabatic Preparation of Topological Order
Phys. Rev. Lett. **100**, 030502 (2008); quant-ph/060714v3
also selected for publication in Virtual Journal of Quantum Information
Citations: 27

24. A.H.
Berry Phases and Quantum Phase Transitions
quant-ph/0602091
Citations: 34

25. A.H., R. Ionicioiu, P. Zanardi
Quantum entanglement in states generated by bilocal group algebras
Phys. Rev. A **72**, 012324 (2005); quant-ph/0504049.
also selected for publication in Virtual Journal of Quantum Information
Citations: 14

26. A.H., P. Zanardi, X.-G. Wen
String and Membrane condensation on 3D lattices
Phys. Rev. B **72**, 035307 (2005); cond-mat/0411752.
Citations: 19

27. A.H., R. Ionicioiu, P. Zanardi
Bipartite entanglement and entropic boundary law in lattice spin systems
Phys. Rev. A **71**, 022315 (2005); quant-ph/0409073.
also selected for publication in Virtual Journal of Quantum Information
Citations: 62

28. A.H., R. Ionicioiu, P. Zanardi
Ground state entanglement and geometric entropy in the Kitaev's model
Phys. Lett. A **337**, 22 (2005); quant-ph/0406202.
Citations: 51

29. A.H., P. Zanardi
Quantum entangling power of adiabatically connected Hamiltonians
Phys. Rev. A **69**, 062319 (2004); quant-ph/0308131.
also selected for publication in Virtual Journal of Quantum Information
Citations: 6

2 Conference Publications

1. A. Hamma
Topological order and entanglement
Advances in Quantum Computation, Edited by Kazem Mahdavi and Deborah Koslover
American Mathematical Society Contemporary Mathematics, Vol. 482 , p. 221-226 (2009)

2. R. Ionicioiu, A. Hamma, and P. Zanardi
Entanglement, area law and group theory
Proceedings of the NATO Advanced Study Institute, Quantum Computation and Quantum Information, 2-13 May 2005 Chania, Crete, Greece

3 Papers in Preparation

- D. Mazac, A.H.
  Topological Entropy in the 4D toric code
- G. Halasz, J. Happola, A.H.
  Exact results for the stability of topological entropy
- S. Montes Valencia, A.H.
  Cluster phases in and out of equilibrium