Maxime Dupont › LIST OF PUBLICATIONS

Personnal website | Google Scholar | arXiv

Last updated on: June 14, 2022

2022

26. **An entanglement perspective on the quantum approximate optimization algorithm**
Maxime Dupont, Nicolas Didier, Mark J. Hodson, Joel E. Moore, and Matthew J. Reagor
arXiv:2206.07024

25. **Calibrating the classical hardness of the quantum approximate optimization algorithm**
Maxime Dupont, Nicolas Didier, Mark J. Hodson, Joel E. Moore, and Matthew J. Reagor
arXiv:2206.06348

2021

24. **Witnessing quantum criticality and entanglement in the triangular antiferromagnet $KYbSe_2$**
A. O. Scheie, E. A. Ghioldi, J. Xing, J. A. M. Paddison, N. E. Sherman, Maxime Dupont, D. Abernathy, D. M. Pajerowski, S-S. Zhang, L. O. Manuel, A. E. Trumper, C. D. Pemmaraju, A. S. Sefat, D. S. Parker, T. P. Devereaux, J. E. Moore, C. D. Batista, and D. A. Tennant
arXiv:2109.11527

23. **Quantum Criticality Using a Superconducting Quantum Processor**
Maxime Dupont and Joel E. Moore
arXiv:2109.10909

22. **Spatiotemporal Crossover between Low- and High-Temperature Dynamical Regimes in the Quantum Heisenberg Magnet**
Maxime Dupont, Nicholas E. Sherman, and Joel E. Moore
Phys. Rev. Lett. 127, 107201 (2021) – arXiv:2104.13393

21. **Monolayer $CrCl_3$ as an Ideal Testbed for the Universality Classes of 2D Magnetism**
Maxime Dupont, Yaroslav O. Kvashnin, Mahroo Shiranzaei, Jonas Fransson, Nicolas Laflorencie, and Adrian Kantian
Phys. Rev. Lett. 127, 037204 (2021) – arXiv:2012.12801

20. **Learning the ground state of a non-stoquastic quantum Hamiltonian in a rugged neural network landscape**
Marin Bukov, Markus Schmitt, and Maxime Dupont
SciPost Phys. 10, 147 (2021) – arXiv:2011.11214

19. **Quantum magnetism on small-world networks**
Maxime Dupont and Nicolas Laflorencie
Phys. Rev. B 103, 174415 (2021) – arXiv:2102.04919

18. **From trivial to topological paramagnets: The case of $\mathbb{Z}_2$ and $\mathbb{Z}_2^3$ symmetries in two dimensions**
Maxime Dupont, Snir Gazit, and Thomas Scaffidi
Phys. Rev. B 103, 144437 (2021) – arXiv:2008.11206

17. **Evidence for deconfined $U(1)$ gauge theory at the transition between toric code and double semion**
Maxime Dupont, Snir Gazit, and Thomas Scaffidi
Phys. Rev. B 103, L140412 (2021) – arXiv:2008.06509

16. **Detection of Kardar-Parisi-Zhang hydrodynamics in a quantum Heisenberg spin-$1/2$ chain**
Allen Scheie, Nicholas E. Sherman, Maxime Dupont, Stephen E. Nagler, Matthew B. Stone, Garrett E. Granroth, Joel E. Moore, and David A. Tennant
Nat. Phys. 17, 726-730 (2021) – arXiv:2009.13535

2020

15. **Dirty bosons on the Cayley tree: Bose-Einstein condensation versus ergodicity breaking**
Maxime Dupont, Nicolas Laflorencie, and Gabriel Lemarié
Phys. Rev. B 102, 174205 (2020) – arXiv:2006.15465

14. **Universal spin dynamics in infinite-temperature one-dimensional quantum magnets**
Maxime Dupont and Joel E. Moore
Phys. Rev. B 101, 121106(R) (2020) – arXiv:1907.12115
Editors' Suggestion

2019

13. **From eigenstate to Hamiltonian: Prospects for ergodicity and localization**
Maxime Dupont, Nicolas Macé, and Nicolas Laflorencie
Phys. Rev. B 100, 134201 (2019) – arXiv:1907.12124

12. **NMR relaxation in the spin-1 Heisenberg chain**
Sylvain Capponi, Maxime Dupont, Anders W. Sandvik, and Pinaki Sengupta
Phys. Rev. B 100, 094411 (2019) – arXiv:1905.12697

11. **Numerical study of the temperature dependence of the NMR relaxation rate across the superfluid-Bose glass transition in one dimension**
Maxime Dupont
Phys. Rev. B 99, 205147 (2019) – arXiv:1902.07361

10. **Many-body localization as a large family of localized ground states**
Maxime Dupont and Nicolas Laflorencie
Phys. Rev. B 99, 020202(R) (2019) – arXiv:1807.01313

2018

9. **Detection of a disorder-induced Bose-Einstein condensate in a quantum spin material at high magnetic fields**
   Anna Orlova, Hadrien Mayaffre, Steffen Krämer, Maxime Dupont, Sylvain Capponi, Nicolas Laflorencie, Armando Paduan-Filho, and Mladen Horvatić
   Phys. Rev. Lett. 121, 177202 (2018) – arXiv:1801.01445

8. **Dynamical response and dimensional crossover for spatially anisotropic antiferromagnets**
   Maxime Dupont, Sylvain Capponi, Nicolas Laflorencie, and Edmond Orignac
   Phys. Rev. B 98, 094403 (2018) – arXiv:1806.04913
   Editors' Suggestion

7. **Dynamical properties of the $S = \frac{1}{2}$ random Heisenberg chain**
   Yu-Rong Shu, Maxime Dupont, Dao-Xin Yao, Sylvain Capponi, and Anders W. Sandvik
   Phys. Rev. B 97, 104424 (2018) – arXiv:1712.01701

2017

6. **Competing Bose-glass physics with disorder-induced Bose-Einstein condensation in the doped $S = 1$ antiferromagnet $Ni(Cl_{1-x}Br_x)_2 - 4SC(NH_2)_2$ at high magnetic fields**
   Maxime Dupont, Sylvain Capponi, Mladen Horvatić, and Nicolas Laflorencie
   Phys. Rev. B 96, 024442 (2017) – arXiv:1705.07166

5. **Nuclear magnetic resonance reveals disordered level-crossing physics in the Bose-glass regime of Br-doped $Ni(Cl_{1-x}Br_x)_2 - 4SC(NH_2)_2$ compound at high magnetic field**
   Anna Orlova, Rémi Blinder, Edwin Kermarrec, Maxime Dupont, Nicolas Laflorencie, Sylvain Capponi, Hadrien Mayaffre, Claude Berthier, Armando Paduan-Filho, and Mladen Horvatić
   Phys. Rev. Lett. 118, 067203 (2017) – arXiv:1607.02360

4. **Disorder-induced Revival of the Bose-Einstein Condensation at High Magnetic Fields in $Ni(Cl_{1-x}Br_x)_2 - 4SC(NH_2)_2$**
   Maxime Dupont, Sylvain Capponi, and Nicolas Laflorencie
   Phys. Rev. Lett. 118, 067204 (2017) – arXiv:1610.05136

3. **Nuclear magnetic resonance study of the magnetic-field-induced ordered phase in the $NiCl_2 - 4SC(NH_2)_2$ compound**
   Rémi Blinder, Maxime Dupont, Sutirtha Mukhopadhyay, Mihael S. Grbić, Nicolas Laflorencie, Sylvain Capponi, Hadrien Mayaffre, Claude Berthier, Armando Paduan-Filho, and Mladen Horvatić
   Phys. Rev. B 95, 020404(R) (2017) – arXiv:1610.03312
   Editors' Suggestion

2016

2. **Temperature dependence of the NMR relaxation rate $1/T_1$ for quantum spin chains**
   Maxime Dupont, Sylvain Capponi, and Nicolas Laflorencie
   Phys. Rev. B 94, 144409 (2016) – arXiv:1606.09502
   Editors' Suggestion

1. **Dimensional modulation of spontaneous magnetic order in quasi-two-dimensional quantum antiferromagnets**
   Shunsuke C. Furuya, Maxime Dupont, Sylvain Capponi, Nicolas Laflorencie, and Thierry Giamarchi
   Phys. Rev. B 94, 144403 (2016) – arXiv:1607.05381