

Maxime Dupont

> LIST OF PUBLICATIONS

🏠 Personal website | 🔍 Google Scholar | 📄 arXiv

Last updated on: July 13, 2022

2022


26. **Quantum Criticality Using a Superconducting Quantum Processor**
Maxime Dupont and Joel E. Moore
[Phys. Rev. B 106, L041109 \(2022\)](#) – [arXiv:2109.10909](#)
📌 Editors' Suggestion
25. **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](#)
24. **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

23. **Witnessing quantum criticality and entanglement in the triangular antiferromagnet KYbSe₂**
A. O. Scheie, E. A. Ghioldi, J. Xing, J. A. M. Paddison, N. E. Sherman, *Maxime Dupont*, L. D. Sanjeewa, S. Lee, A. J. Woods, D. Abernathy, D. M. Pajerowski, T. J. Williams, S-S. Zhang, L. O. Manuel, A. E. Trumper, C. D. Pemmaraju, A. S. Sefat, D. S. Parker, T. P. Devereaux, R. Movshovich, J. E. Moore, C. D. Batista, and D. A. Tennant
[arXiv:2109.11527](#)
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 CrCl₃ 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 $\text{Ni}(\text{Cl}_{1-x}\text{Br}_x)_2 - 4\text{SC}(\text{NH}_2)_2$ 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 $\text{Ni}(\text{Cl}_{1-x}\text{Br}_x)_2 - 4\text{SC}(\text{NH}_2)_2$ 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 $\text{Ni}(\text{Cl}_{1-x}\text{Br}_x)_2 - 4\text{SC}(\text{NH}_2)_2$**
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 $\text{NiCl}_2 - 4\text{SC}(\text{NH}_2)_2$ 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](#)