

Maxime Dupont

> LIST OF PUBLICATIONS

🌐 Personnel website | 🔍 Google Scholar | 📄 arXiv


Last updated on: September 23, 2021

2021

24. **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, 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 CrCl₃ as an Ideal Testbed for the Universality Classes of 2D Magnetism**
Maxime Dupont, Yaroslav O. Kvashnin, Mahroo Shiranzadei, 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](#)