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Dissertation

R. Schäfer

Magnetic frustration in three dimensions

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Publication list

- [13] E. M. Smith, **R. Schäfer**, et al.
Single Crystal Diffuse Neutron Scattering Study of the Dipole-Octupole Quantum Spin Ice Candidate $\text{Ce}_2\text{Zr}_2\text{O}_7$: No Apparent Octupolar Correlations Above $T=0.05\text{K}$
[Phys. Rev. X 15, 021033 \(2025\)](#)
- [12] **R. Schäfer**, and D. J. Luitz
DanceQ: High-performance library for number conserving bases
[SciPost Phys. Codebases 48 \(2025\)](#)
[DanceQ repository](#) and [DanceQ documentation](#)
- [11] Z. Lu, **R. Schäfer**, J. N. Hallén, C. R. Laumann
[111]-strained spin ice: Localization of thermodynamically deconfined monopoles
[Phys. Rev. B 110, 184421 \(2024\)](#)
- [10] D. Yahne, B. Placke, **R. Schäfer**, et al.
Dipolar spin ice regime proximate to an all-in-all-out Néel ground state in the dipolar-octupolar pyrochlore $\text{Ce}_2\text{Sn}_2\text{O}_7$
[Phys. Rev. X 14, 011005 \(2024\)](#)
- [9] J. Beare, E. M. Smith, J. Dudemaine, **R. Schäfer**, et al.
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- [8] E. M. Smith, J. Dudemaine, B. Placke, **R. Schäfer**, et al.
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[Phys. Rev. Lett. 131, 096702 \(2023\)](#)
- [6] **R. Schäfer**, J. C. Budich, and D. J. Luitz
Symmetry protected exceptional points of interacting fermions
[Phys. Rev. Research 4, 033181 \(2022\)](#)
- [5] I. Hagymási, **R. Schäfer**, R. Moessner, and D. J. Luitz
Magnetization process and ordering of the $S = 1/2$ pyrochlore Heisenberg antiferromagnet in a magnetic field
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- [4] E. Smith, O. Benton, D. Yahne, B. Placke, **R. Schäfer**, *et al.*
The case for a $U(1)\pi$ Quantum Spin Liquid Ground State in the Dipole-Octupole Pyrochlore $\text{Ce}_2\text{Zr}_2\text{O}_7$
[Phys. Rev. X 12, 021015 \(2022\)](#)
- [3] I. Hagymási, **R. Schäfer**, R. Moessner, and D. J. Luitz
Possible Inversion Symmetry Breaking in the $S = 1/2$ Pyrochlore Heisenberg Magnet
[Phys. Rev. Lett. 126, 117204 \(2021\)](#)
- [2] **R. Schäfer**, I. Hagymási, R. Moessner, and D. J. Luitz
Pyrochlore $S = \frac{1}{2}$ Heisenberg antiferromagnet at finite temperature
[Phys. Rev. B 102, 054408 \(2020\)](#)
- [1] **R. Schäfer**, G. S. Uhrig, and J. Stolze
Time-crystalline behavior in an engineered spin chain
[Phys. Rev. B 100, 184301 \(2019\)](#)

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- [1] E. M. Smith, A. Fitterman, **R. Schäfer**, *et al.*
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- [2] D. Vuina, **R. Schäfer**, D. M. Long, A. Chandran
Probing Hilbert space fragmentation using controlled dephasing
[arXiv:2506.13856 \(2025\)](#)
- [2] **R. Schäfer**, C. Chamon, C. R. Laumann
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- [4] H. Kim, **R. Schäfer**, D. M. Long, A. Polkovnikov, A. Chandran
— **shared first authorship**
Confined and deconfined chaos in classical spin systems
[arXiv:2507.07168](#) (2025)