List of Publications

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Numerical investigations of SO(4) emergent extended symmetry in spin-1/2 Heisenberg antiferromagnetic chains
Pranay Patil, Emanuel Katz, and Anders W. Sandvik
Phys. Rev. B **98**, 014414 (2018)

Resonating valence-bond physics on the honeycomb lattice
Pranay Patil, Ishita Dasgupta, and Kedar Damle
Phys. Rev. B **90**, 245121 (2014)

Hilbert space fragmentation and Ashkin-Teller criticality in fluctuation coupled Ising models
Pranay Patil and Anders W. Sandvik
Phys. Rev. B **101**, 014453 (2020)

Indicators of conformal field theory: Entanglement entropy and multiple-point correlators
Pranay Patil, Ying Tang, Emanuel Katz, and Anders W. Sandvik
Phys. Rev. B **96**, 045140 (2017)

Quantum Annealing XORSAT on Dilute Square Lattices
Pranay Patil, Claudio Chamon, Stefanos Kourtis, Andrei Ruckenstein, and Eduardo Mucciolo
Phys. Rev. B **100**, 054435 (2019)

Probing XY phase transitions in a Josephson junction array with tunable frustration
R. Cosmic, K. Kawabata, Y. Ashida, H. Ikegami, S. Furukawa, P. Patil, J. M. Taylor, Y. Nakamura
Phys. Rev. B **102**, 094509 (2020).

Quantum half-orphans in kagome antiferromagnets
Pranay Patil, Fabien Alet, Sylvain Capponi, and Kedar Damle,
Phys. Rev. Research **2**, 043425 (2020).

Unconventional U(1) to Zq cross-over in quantum and classical q-state clock models
Pranay Patil, Hui Shao and Anders W. Sandvik
Phys. Rev. B **103**, 054418 (2021).

A Neural-Network Variational Quantum Algorithm for Many-Body Dynamics
Chee-Kong Lee, Pranay Patil, Shengyu Zhang, Chang-Yu Hsieh
Phys. Rev. Research **3**, 023095 (2021).

Weakly first-order quantum phase transition between Spin Nematic and Valence Bond Crystal Order in a square lattice SU(4) fermionic model
Pranay Patil, Fabien Alet, Sylvain Capponi, Matthieu Mambrini
Phys. Rev. B 105, L140403 (2022).