

Abstract Submitted
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$z = 2$ Quantum Criticality in Heisenberg Spin Chains near Saturation DOMINIC BLOSSER, KIRILL POVAROV, DAVID SCHMIDIGER, Neutron Scattering and Magnetism, ETH Zurich, ROBERT BEWLEY, Rutherford Appleton Laboratory, UK, EMANUELE COIRA, THIERRY GIAMARCHI, Theory of Quantum Matter Group, University of Geneva, ANDREY ZHELUDEV, Neutron Scattering and Magnetism, ETH Zurich — We study quantum critical dynamics in Heisenberg spin chains near saturation. Using inelastic neutron scattering we investigate the prototypical Heisenberg spin chain compound $\text{K}_2\text{CuSO}_4\text{Cl}_2$. The full excitation spectra are measured at different temperatures near the critical point. This data we compare to finite temperature density matrix renormalization group calculations (T-DMRG). In addition, specific heat and magnetization data show remarkable universal scaling behaviour near the quantum critical point.

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