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Magnetic Phases of the Shastry-Sutherland Model using Projected Entangled Simplex States TRITHEP DEVAKUL, ADRIAN E. FEIGUIN, Department of Physics, Northeastern University — We study the magnetic phases of the Shastry-Sutherland lattice at finite magnetic fields using the Projected Entangled Simplex States (PESS) class of tensor networks. The ground state is calculated via a projection approach by imaginary time evolution at various external fields. We study the convergence of the method and compare to results from Density Matrix Renormalization Group and Tensor Renormalization. We focus on the commensurate phases at low fields and establish the structure of the correlations at several plateaus.

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