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Time Evolution of Correlator Product States JESSE M. KINDER, Cornell University, GARNET KIN-LIC CHAN, HITESH CHANGLANI, ERIC NEUSCAMMAN, CYRUS J. UMRIGAR — Correlator product states are a class of many-body wave functions that allow the efficient numerical simulation of strongly correlated systems in any dimension. We have developed algorithms to approximate the time evolution of correlator product states. Evolution in imaginary time projects an arbitrary wave function onto the ground state of the system. Real time evolution simulates the dynamics of a system and can be used to construct the spectral density function. We present studies of the time evolution of correlator product states for the Heisenberg model in one, two, and three dimensions.

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