Dynamics of the transverse-field Ising model in 3D MARKUS
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Dresden — We formulate the dynamics after a quench in the three-dimensional
transverse-field Ising model in terms of classical partition sums, which can be evalu-
ated using conventional Monte Carlo methods for classical spin systems with system
sizes markedly beyond the capabilities of, e.g., exact diagonalization. In this way,
we obtain insights into the time evolution of observables and dynamical quantum
phase transitions in the Loschmidt echo, which we analyze in the vicinity of critical
times similar to [M. Heyl, Phys. Rev. Lett. 115, 140602 (2015)].

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