Entanglement in Spin-1/2 Dimerized Heisenberg Systems

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Abstract: We study entanglement in dimerized Heisenberg systems. In particular, we give exact results of ground-state pairwise entanglement for the four-qubit model by identifying a Z_2 symmetry. Although the entanglements cannot identify the critical point of the system, the mean entanglement of the nearest-neighbor qubits really does, namely, it reaches a maximum at the critical point.

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