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Entanglement dynamics for quantum systems with strongly long-range interactions

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Strongly long-range interacting quantum systems those with interactions decaying slower than $1/r^D$ in the distance on a D – dimensional lattice have received significant interest in recent years. They represent leading experimental platforms for quantum computation and simulation, as Robinson – type bounds that constrain the time it takes to entangle two parts of a quantum system with strongly long – range interactions. These bounds are optimal in a variety of physical scenarios where we can construct explicit Hamiltonians that saturate the bounds.