

Abstract Submitted
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Operator Spreading and Scrambling in a Quantum Chaotic Spin Chain CHERYNE JONAY, DAVID. A HUSE, Princeton Univ — We numerically examine operator dynamics under the unitary time evolution of a quantum chaotic Ising spin chain with longitudinal and transverse fields. We study the spreading of initially local operators. We also focus on the scrambling of the operators, asking: at late time, to what extent do time-evolved local operators statistically resemble random operators? Does the leading edge of the operator spreading move faster than the scrambling of the operator? How many different time regimes are there in the spreading and scrambling of a local operator in a finite quantum chaotic spin chain?

Cheryne Jonay
Princeton Univ

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