Complexity, Entanglement and Topology

Topological Phase Transitions in the SSH model

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We investigate the evolution of circuit complexity and entanglement following a quench in a one-dimensional topological system, namely the Su-Schrieffer-Heeger model.

We find that:

- Complexity can detect the various phase transitions
- Complexity can detect revivals in finite-sized quantum systems
- Entanglement entropy saturates *after* the circuit complexity in the SSH model
- Measures of entanglement are more sensitive to topological order than complexity