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Entanglement Spectrum of a Random Partition: Connection with the Anderson Transition SAGAR VIJAY, LIANG FU, Massachusetts Inst of Tech-MIT — The entanglement spectrum of a topologically-ordered ground-state that is obtained by partitioning the system under consideration into two subsystems which extend throughout the bulk, has been recently shown to be a probe of the quantum critical behavior of the topological phase at the transition to a direct-product state [1]. Here, we generalize this notion of a bulk entanglement spectrum to extract universal information about disorder-driven topological phase transitions, by performing an extensive, random partition into two subsystems with probability $p \in [0, 1]$. We apply our random partitioning procedure to a one-dimensional topological superconductor (TSC), and demonstrate that the phase diagram of the resulting entanglement Hamiltonian describes disorder-driven transitions to a Griffiths phase.
[1] T. H. Hsieh and L. Fu, Phys. Rev. Lett. **113**, 106801 (2014).

Sagar Vijay
Massachusetts Inst of Tech-MIT

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