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Eigenstate entanglement entropy in spinless fermion systems LEV VIDMAR, LUCAS FABIAN HACKL, EUGENIO BIANCHI, MARCOS RIGOL, The Pennsylvania State University — The entanglement entropy of ground states of spinless fermion systems has been extensively studied in recent years. Here, we focus on its properties in the entire spectrum, which have remained largely unexplored. We discuss evidence of the fact that, for any subsystem that is a finite fraction of the entire system, the average eigenstate entanglement entropy is always smaller than that of the infinite-temperature thermal state. We also study the dependence of the entanglement entropy on the subsystem size.

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