Quantum quenches, i.e., sudden changes of Hamiltonians, are arguably the simplest protocol for driving a quantum system out of equilibrium. A particular recent interest concerns on the topological aspects of quench dynamics, where the pre- and post-quench Hamiltonians can be in the same or different topological phases. In this talk, I will focus on the quench dynamics in one-dimensional symmetry-protected topological systems from a perspective of the entanglement spectrum, which is a universal character for topological systems. I will present a systematic classification of quench dynamics in all the Altland-Zirnbauer classes and propose to distinguish the topological difference from the entanglement-spectrum crossing [1]. I will also talk about a Lieb-Robinson-like rigorous result on the entanglement gap [2].

References
