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Electronic properties at an interface between Mott-insulator and topological-insulator SUGURU UEDA, NORIO KAWAKAMI, Kyoto University, MANFRED SIGRIST, ETH Zürich — We investigated the correlated heterostructure of two-dimensional topological and Mott insulator with the inhomogeneous dynamical- mean-field theory combined with Lanczos exact diagonalization method. We focus on the proximity effects driven by the topological helical edge-state. It is elucidated that the edge state penetrates into the Mott insulator and induces a strongly renormalized in-gap state with helical energy spectrum We also address how the in-gap state is affected by the coupling between the Mott and topological insulators, and find the enhanced renormalization-effect caused by the band reconstruction at the interface.

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