

The numerical calculations were performed on supercomputer at the ISSP in the University of Tokyo, and the SR16000 at YITP in Kyoto University.

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**R-DMFT analysis for reduction of topological classification in a two-dimensional weak topological insulator** TSUNEYA YOSHIDA, NORIO KAWAKAMI, Kyoto University — Recent extensive study of topological insulators and superconductors discovered the reduction of topological classification in free-fermions. By employing the real-space dynamical mean field theory, we address this issue in a two-dimensional weak topological insulator with chiral symmetry. Our analysis elucidates the following results: (a) The winding number defined by the Green's function takes a nontrivial value around the zero temperature, even when the reduction occurs. (b) The non-zero winding number and the destruction of gapless edge modes become consistent because of Mott behaviors emerging only around the edges. (c) Finite temperature effects can restore the gapless edge modes when the energy scale of the bulk gap is sufficiently larger than the interactions.

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