

Abstract Submitted
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Edge superconducting correlation in attractive-U-Kane-Mele Hubbard model¹ JIE YUAN, JINHUA GAO², Department of Physics, and Center of Theoretical and Computational Physics, University of Hong Kong, Hong Kong, China, WEIQIANG CHEN³, Department of Physics, and Center of Theoretical and Computational Physics, University of Hong Kong, Hong Kong, China, FEI YE, Department of Physics, South University of Science and Technology of China, Shenzhen, Guangdong 518055, China, YI ZHOU, Department of Physics, Zhejiang University, Hangzhou 310058, China, FUCHUN ZHANG⁴, Department of Physics, and Center of Theoretical and Computational Physics, University of Hong Kong, Hong Kong, China — The two-dimensional Kane-Mele model with attractive Hubbard interaction U is studied by using a self-consistent mean-field theory. At $U = 0$, the ground state is a topological insulator. At U larger than a critical value U_c , the ground state is a bulk superconductor. At $0 < U < U_c$, the bulk remains insulating while the edge state shows superconducting correlation. The effective model for the edge superconducting state is discussed.

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²Dr Jinhua Gao is also affiliated with Department of Physics, Huazhong University of Science and Technology, Wuhan, Hubei 430074, China

³Dr Weiqiang Chen is also affiliated with Department of Physics, South University of Science and Technology of China, Shenzhen, Guangdong 518055, China

⁴Prof Fuchun Zhang is also affiliated with Department of Physics, Zhejiang University, Hangzhou 310058, China

Jie Yuan
Dept of Physics, and Center of Theoretical and Computational Physics,
University of Hong Kong, Hong Kong, China

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