

Abstract Submitted
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Multiple Phase Transition of the Fulde-Ferrel-Larkin-Ovchinnikov States in two-band Superconductors MASAHIRO TAKAHASHI, Department of Physics, Gakushuin University, TAKESHI MIZUSHIMA, KAZUSHIGE MACHIDA, Department of Physics, Okayama University — The Fulde-Ferrell-Larkin-Ovchinnikov (FFLO) states in the two-band superconductors are studied. FFLO states will be realized in superconductors with high external field or in ultracold atom gases with imbalanced population of the atoms for pairing. In this study we focused on superconductors. We take into account the contribution of the 2nd band which has not been considered from the microscopic point of view. We extended the Bogoliubov-de Gennes equation for the multiple-band system and solved numerically with various parameters. As a result, the multiple phase transition from the BCS state to FFLO state, and in addition, between multiple FFLO states. The transition between states are 1st order, where usual BCS to FFLO phase transition is 2nd order.

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