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Impurities induced configuration space phase transition in the Fulde-Ferrell-Larkin-Ovchinnikov state[1] QIAN WANG, Texas Center for Superconductivity at University of Houston, CHIA-REN HU, Department of Physics, Texas A&M University, CHIN-SEN TING, Texas Center for Superconductivity at University of Houston — We study the effects of impurities on the Fulde-Ferrell-Larkin-Ovchinnikov (FFLO) state at low temperature in d-wave superconductors. At low impurity concentration, the order parameter remains two-dimensional lattice like. When the impurity concentration reaches certain level, nodal lines of the order parameter no-longer cross each other and the variation of the order parameter becomes essentially one dimensional. We will also discuss the effects of impurities on the quasi-particle density of states.

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