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Larkin-Ovchinnikov-Fulde-Ferrell (LOFF) Phase in (TMTSF)2X Conductors: Theory versus Experiment[1] ANDREI LEBED, Dept. of Physics, University of Arizona — We consider a problem of a formation of the LOFF phase in a quasi-one-dimensional (Q!D) conductor, where we take into account both the paramagnetic spin-splitting effects and the orbital effects against superconductivity. We show that due to a weakness of the orbital effects in a Q1D case, the LOFF phase appears in (TMTSF)2X (X=ClO4 and PF6) superconductors for real values of the Q1D band parameters. We compare our theoretical calculations with the recent experimental data by Y. Maeno group, obtained on (TMTSF)2ClO4 superconductor, and show that there is a good qualitative and quantitative agreement between the theory and the experimental data. Note that the LOFF phase naturally appears in a singlet Q1D superconductor, whereas it may also appear in triplet Q1D superconductor under special conditions. Our work is supported by the NSF through the grant DMR-0705986.

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