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The competition between chiral density wave and two-avor LOFF phase of color superconductivity in the NJL model

We investigate the competition between chiral density wave (CDW) and two-flavor LOFF phase of color superconductivity in the Nambu-Jona-Lasinio (NJL) model. A first order phase transition connects the chiral density wave and LOFF phase if the diquark coupling constant G_d is not very large, which is independent of the relative direction of chiral wave vector $\vec{q}$ and LOFF pair momentum $\vec{q}'$. There are two tricritical points in which chiral density wave, LOFF, 2SC and chiral density wave, LOFF and restored phase coincides, respectively. When diquark coupling constant G_d continuously increases to a certain value, the chiral density wave is separated with the LOFF by 2SC and restored phase.

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