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Superconductivity on the Background of the State of the Spin Density Wave in Anisotropic Systems

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A theory of phase transitions in quasi-two-dimensional systems is developed in the case of doping. We take into account the presence of "nesting" on the Fermi surface and the structure of the lattice. A self-consistent system of equations for the superconducting order parameters Δ, magnetic M and chemical potential μ is obtained. For $\Delta = 0$, $M \neq 0$ we have the magnetic state of the spin density wave (SDW). With the change of the density of charge carriers x phase transition - commensurate - incommensurate SDW state occurs. Against the background of this state (for $\Delta \neq 0$ and $M \neq 0$) superconductivity may appear, which is accompanied by magnetism. Numerical solutions for the thermodynamic quantities in magnetic and mixed phase are given.