

Characteristic features of d pairing in bilayer cuprates under conditions of Peierls instability of the normal phase

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Abstract

A system of self-consistent integral equations for the superconducting gap is formulated and solved taking account of the instability of the normal phase of bilayer cuprates against charge-density waves. The critical parameters are calculated as a function of the wave vector, temperature, and doping index. It is found that the region in which superconductivity coexists with d-type charge-density waves depends strongly on the doping index. The effective energy-gap parameter, determined as the interval between the peaks of the density of states, can have a local minimum at temperatures T