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Pseudogap and kinetic energy of unconventional superconductivity in the two dimensional Hubbard model.[1] A. TROPER, Centro Brasileiro de Pesquisas Fisicas, ELEONIR CALEGARI, ANA LAUSMANN, LEONARDO PRAUCHNER, Departamento de Fisica , UFSM, SERGIO MAGALHAES, Instituto de Fisica, UFRGS, C. M. CHAVES, Centro Brasileiro de Pesquisas Fisicas — In conventional superconductors the transition from the normal to the superconducting state is accompanied by a reduction in the potential energy and an increase in the kinetic energy. On the other hand, in HTSC the potential and the kinetic energies present an unconventional behavior that may be strongly related to the pseudogap phenomena. In this work, we analyze the kinetic and potential energies in the superconducting state of the two-dimensional Hubbard model [1,2]. The model is investigated by the Green's function method within a n-pole approximation, which allows to consider superconductivity with d_{x2-y2}-wave pairing. In the present scenario, a pseudogap emerges near the anti-nodal points in the Fermi surface, when the strong coupling regime is reached. The obtained results show that in the low doping region, the system enters the strong coupling regime and the opening of a pseudogap is followed by a decreasing in the kinetic energy and a increasing in the potential energy. [1] L. M. Roth, Phys. Rev. 184, 451 (1969). [2] J. Beenen and D. M. Edwards, Phys. Rev. B52, 13636 (1995)..

[1]CNPq,Capes,Fapergs,Faperj

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