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Unconventional superconductivity in honeycomb lattice

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Abstract

The possibility of symmetrical s -wave superconductivity in the honeycomb lattice is studied within a strongly correlated regime, using the Hubbard model. The superconducting order parameter is defined by introducing the Green function, which is obtained by calculating the density of the electrons. In this study showed that the superconducting order parameter appears in doping interval between 0 and 0.5, and $x=0.25$ is the optimum doping for the s -wave superconductivity in honeycomb lattice.

Keywords: Honeycomb lattice, Hubbard model, Green function, Superconductivity

For full article, refer to the Persian section