

Density of states and Specific heat in extended s-wave superconductors

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We present the physical properties of extended s-wave superconductors, such as s+g wave and point-node superconductors, in comparison with those of a d-wave superconductor. In the framework of the quasiclassical formalism, we mainly focus on the superconducting gap, density of states and specific heat in the presence of impurities. Impurity effects are described by using two parameters: the scattering cross section σ and impurity scattering rate $1/2\tau$. The unitarity limit of the scattering corresponds to $\sigma = 1$, while Born limit is achieved as σ approaches zero. Calculations cover the whole range of impurity effect, from the Born limit to the unitarity limit.