

Superconductivity in Strontium Ruthenate

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We analyze the possibilities of triplet pairing in Sr_2RuO_4 based upon a three orbital and three dimensional model. Depending on the orbital dependent effective interactions we find two possible gap models. In the first model the orbital dependent interlayer attraction influences the quasi-particle spectra which have horizontal line or point nodes on the α and β sheets and no nodes on the γ sheet. In the other model there is no interlayer interaction coupling and all bands are fully gaped. For both models we show the quasi-particle density of states and the eigenvalues on the Fermi surface. The corresponding calculated specific heat results are also compared to the experimental data.

9.7 cm

13.4 cm

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