SUPERCONDUCTIVITY WITH P-WAVE PAIRING IN Sr_2RuO_4

G. Litak[a], J.F. Annett[b], B.L. Györffy[b], K.I. Wysokiński[c]

[a]Technical University of Lublin, Nadbystrzycka 36, PL–20-618 Lublin, Poland

[b]H.H. Wills Physics Laboratory, University of Bristol,
Tyndall Ave, Bristol, BS8 1TL, UK

[c]Institute of Physics, Maria Curie-Skłodowska University,
Radziszewskiego 10, PL-20-031 Lublin, Poland

9.7 cm

We analyse the pairing symmetry of the order parameter in superconducting Sr_2RuO_4. Basing on a realistic three dimensional 3 band energy spectrum we have introduced effective attractive electron-electron interactions and found a p-wave solution which has line nodes in the gap in α and β bands but not in γ band. Due to a special kind of inter-orbital interaction, which mixes the symmetries of the order parameters of in–plane and out of–plane solutions the model has naturally single critical temperature. This state breaks time reversal symmetry and leads to the proper temperature dependence of the specific heat.

13.4 cm

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Corresponding author :
G. Litak

Address for correspondence :
Technical University of Lublin, Nadbystrzycka 36,
PL–20-618 Lublin, Poland

Email address :
litak@archimedes.pol.lublin.pl