Superconductivity in metals without inversion symmetry

Manfred Sigrist

ETH Zürich

During the last two years the topics of superconductivity in materials without inversion center has experienced renewed interest, initiated through the discovery of the heavy Fermion system CePt$_3$Si, and several other compounds found subsequently. These superconductors show a number of unusual properties, in particular in a high magnetic field. The key to the understanding of these features lies very likely in the presence of antisymmetric spin-orbit coupling, whose role for superconductivity and some normal state properties will be discussed in this presentation. Moreover, the present experimental situation will be reviewed.