Superconductivity in non-centrosymmetric compound ThCoSi

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The silicide ThCoSi crystallizes with an orthorhombic crystal structure of the LaPtSi-type (space group $I4_1md$) that lacks an inversion center. Its low-temperature properties were studied by means of magnetization, electrical resistivity and heat capacity measurements, performed down to 0.35 K in magnetic fields up to 9 T. The compound was revealed to exhibit bulk superconductivity below $T_c = 3.14$ K, characterized by the upper critical field comparable to the Pauli-Clogston limit. From the experimental data, the key parameters of the superconducting state were derived and compared with a few related systems. The discussion will be focused on the role of non-centrosymmetricity on the superconducting features of this weakly correlated material.