

凝縮系物理学ゼミナール

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場所：理学部5号館 413号室

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「Anomalous superconducting behaviors of noncentrosymmetric CePt₃Si: Analysis using magnetic penetration depth measurements」

CePt₃Si remains as the most interesting and intriguing of all superconductors without spatial inversion symmetry. Few of its superconducting properties are experimentally well established, although they are at first sight in conflict and are not quite understood yet: a small peak just below T_c in T_1 -NMR, a constant spin susceptibility in parallel and perpendicular field orientation across T_c , line nodes in the energy gap, and a quite small anisotropy. There are two other puzzling results in CePt₃Si: a broad superconducting transition and an unestablished transition temperature. In this talk I will discuss these two last unusual behaviors and compare them with the responses found in the isostructural nonmagnetic LaPt₃Si. I will present our measurements of the magnetic penetration depth in several single crystals of CePt₃Si and LaPt₃Si, and also give details of the technique used to measure the penetration depth.