

Abstract Submitted
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Superconductivity and possible charge Kondo effect in Tl-doped PbTe Y. MATSUSHITA, Department of Materials Science and Engineering, Stanford University, H. BLUHM, Department of Physics, Stanford University, T. H. GEBALLE, I. R. FISHER, Department of Applied Physics, Stanford University — We report results of low-temperature thermodynamic and transport measurements of $\text{Pb}_{1-x}\text{Tl}_x\text{Te}$ single crystals for Tl concentrations up to the solubility limit of approximately 1.5%. For x greater than approximately 0.3%, the samples superconduct with a maximum T_c of approximately 1.4 K for the highest Tl concentrations. For all doped samples, we observe an anomalous low-temperature upturn in the resistivity that saturates below 1 K and that scales in magnitude with the Tl concentration. The temperature and field dependence of this upturn are consistent with Kondo-like behavior of a nonmagnetic degenerate two-level system.

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