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Session E13: Non-centro Symmetric Materials Based Topological Superconductivity
8:00 AM–11:00 AM, Tuesday, March 6, 2018
LACC Room: 304A

Sponsoring Unit: DMP
Chair: Ching-Kai Chiu, University of Maryland

Abstract: E13.00003 : Noncentrosymmetric superconductivity in epitaxial half-Huesler LaPtBi films*

8:48 AM–9:00 AM

← Abstract →

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The lack of inversion symmetry and presence of superconductivity makes half-Huesler compound LaPtBi a noncentrosymmetric superconductor. The LaPtBi films we study are grown on MgO by molecular beam epitaxy with significant compressive strain in the films. Magneto-resistance in the normal state exhibits a cusp-like minima at low magnetic fields which only depends on the total magnetic field. This is attributed to electron-electron interaction effects in disordered systems. Transmission electron microscopy images also confirm the nanocrystalline film growth. We observe superconductivity at onset of 0.7 K. The critical magnetic field has a linear dependence on temperature down to 50 mK, a non BCS type behavior. The critical current decreases linearly with magnetic field. The *IV* characterestics indicate the presence of intrinsic Josephson effect in the nanocrystalline films.

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