

Abstract Submitted  
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**Upper critical field of  $p$ -wave superconductors with orthorhombic symmetry** CHRISTOPHER LÖRSCHER, RICHARD KLEMM, University of Central Florida — Recent experiments on exotic ferromagnetic superconducting materials such as UCoGe and topological superconductors such as  $\text{Cu}_x\text{Bi}_2\text{Se}_3$ , have spawned renewed interest in  $p$ -wave superconductivity. We present an extension of the Scharnberg-Klemm theory of  $H_{c2}$  in  $p$ -wave superconductors to cases of partially broken symmetry in an orthorhombic crystal. Using a uniaxial anisotropic pairing interaction as is appropriate for the low-field regime of UCoGe, we have shown that a field induced crossover from one  $p$ -wave state to another can lead to kinks in  $H_{c2}(T)$ , which can mimic upward curvature in all three crystal axis directions. Reasonably good fits to the low-field UCoGe data are obtained. We have also investigated the angular dependence of the axial  $p$ -wave state, which might prove useful in identifying the  $p$ -wave state present in certain materials, and possibly suggest new experiments on well known  $p$ -wave superconductors.

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