

Abstract Submitted
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Possible Unconventional superconductivity in $\text{YCo}_{0.7}\text{C}_2$ ORLANDO CIGARROA, Univ de Sao Paulo, PRISCILA FERRARI ROSA, University of California Irvine, LUIZ TADEU ELENO, Univ de Sao Paulo, ZACHARY FISK, University of California Irvine, ANTONIO JEFFERSON DA SILVA MACHADO, Univ de Sao Paulo — Non-centrosymmetric superconductors as CePt_3Si [1,2] and sequicarbides $(\text{La},\text{Y})_2\text{C}_3$ [3] are remarkable examples of unusual properties displayed associated to unconventional pairing due to an antisymmetric spin-orbit coupling. Another interesting case is the family of compounds belonging to the CeNiC_2 type structure, in which more than thirty stable compounds have found to crystallize in this structure. Here we report magnetization, resistivity, and heat capacity measurements on poly-crystalline samples of non-centrosymmetric $\text{YCo}_{0.7}\text{C}_2$, showing clear evidence of bulk superconductivity with a critical temperature of $T_c = 4$ K. Interestingly the specific heat of the superconducting state deviates from conventional exponential temperature dependence, which is suggestive of possible unconventional superconducting behavior in $\text{YCo}_{0.7}\text{C}_2$, similar to that seen in the isostructural and isoelectronic superconductor LaNiC_2 [4]. Besides, these results strongly suggest that this material is a strong candidate of multiband superconductivity. References: [1] E. Bauer, G. Hilscher, H. Michor, C. Paul and P. Rogl, Phys. Rev. Lett. 92 (2004) 027003.

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