

Abstract Submitted
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Magnetotransport properties and the Fermi surface of high-quality single crystal VB_2 ¹ A.B. KARKI, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803, D. GAUTREAU, J.Y. CHAN, Department of Chemistry, Louisiana State University, Baton Rouge, LA 70803, N. HARRISON, National High Magnetic Field Laboratory, Los Alamos National Laboratory, Los Alamos, NM 87545, D. BROWNE, R.G. GOODRICH, D.P. YOUNG, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803 — We have performed magnetotransport and dHvA measurements on high quality single crystals of VB_2 grown from a molten aluminum flux. At low temperature the magnetoresistance (MR) of VB_2 is very large ($\sim 1100\%$) and is found to be extremely sensitive to sample quality. The field dependence of the MR is proportional to the applied field squared, as is expected from open orbits on the Fermi surface. In addition, we have performed full potential LAPW calculations with the WIEN2K band package using the GGA density functional to compute the bands and Fermi surface. The calculations suggest that the area of the Fermi surface is a strong function of the lattice constants. The results of the calculations will be compared to experiment.

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