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**Spin-dependent band structure of the ferromagnetic semimetal  $\text{EuB}_6$**  PENG XIONG, X. ZHANG, S. VON MOLNAR, Florida State University, Z. FISK, University of California at Irvine — The spin polarization of  $\text{EuB}_6$  crystals has been measured using Andreev reflection spectroscopy. The conductance spectra of the  $\text{EuB}_6/\text{Pb}$  junctions are well-described by the spin-polarized BTK model, which yields a spin polarization of about 56%. The results demonstrate that ferromagnetic  $\text{EuB}_6$  is not half-metallic. Further analyses of the Hall effect and magnetoresistivity indicate a semi-metallic band structure with complete spin polarization for the hole band only. The values and the spread of the measured spin polarization are *quantitatively* consistent with Fermi surface determined by quantum oscillation measurements<sup>1</sup> and carrier densities obtained from standard two-band model fits to the low temperature magnetoresistivity and Hall resistivity. This work was supported by a FSU Research Foundation PEG, NSF DMR 0710492 and 0503360 grants. <sup>1</sup>R. Goodrich et al., PRB **58**, 14896 (1998); M. Aronson et al., PRB **59**, 4720 (1999).

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