Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Large anisotropy in the paramagnetic susceptibility of $SrRuO_3$ films[1] LIOR KLEIN, YEVGENY KATS[2], ISASCHAR GENISH, Bar-Ilan University, Israel, JAMES W. REINER[3], M. R. BEASLEY, Stanford University — By using the extraordinary Hall effect in $SrRuO_3$ films we performed measurements of the paramagnetic susceptibility in this itinerant ferromagnet, from T_c ($\sim$ 150 K) to 300 K. These measurements, combined with measurements of magnetoresistance, reveal that the susceptibility, which is almost isotropic at 300 K, becomes highly anisotropic as the temperature is lowered, diverging along a single crystallographic direction in the vicinity of T_c. The results provide a manifestation of the effect of large magnetocrystalline anisotropy in the paramagnetic state of a *4d* itinerant ferromagnet [e-print: cond-mat/0311341]. They also shed light on the controversy regarding the nature of the universality class of the phase transition in $SrRuO_3$ [D. Kim *et al*, Phys. Rev. B **67**, 100406(R) (2003)].

[1]Supported by the Israel Science Foundation founded by the Israel Academy of Sciences and Humanities.
[2]Present affiliation: Harvard University
[3]Present affiliation: Yale University

Yevgeny Kats
Harvard University

Date submitted: 30 Nov 2004 Electronic form version 1.4