Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Dynamics of Proximate Order Parameters Measured by the Time-Resolved Magneto-Optical Kerr Effect in $SrRuO_3$ /$YBa_2Cu_3O_{7-x}$Heterostructures C.L.S. KANTNER, M.C. LANGNER, Dept. of Physics, UC Berkeley and Lawrence Berkeley National Lab, S.P. CRANE, L.W. MARTIN, Y.-H. CHU, P. YU, Dept. of Materials Science, UC Berkeley, R. RAMESH, Dept. of Physics and Dept. of Materials Science, UC Berkeley, J.W. ORENSTEIN, Dept. of Physics, UC Berkeley and Lawrence Berkeley National Lab — The interaction between ferromagnetic and superconducting complex oxides in a heterostructure is a subject of great interest. The recent observation of ferromagnetic resonance in $SrRuO_3$ by the time-resolved magneto-optical Kerr effect (TRMOKE) presents a new method for insight into such a system. TRMOKE has been used to compare the temperature dependence of magnetization dynamics in $SrRuO_3$ grown on insulating substrates and ferromagnetic $SrRuO_3$/superconducting $YBa_2Cu_3O_{7-x}$heterostructures. The substantial differences between SRO grown on an insulating substrate compared to YBCO as well as the effects seen upon passing through the YBCO transition temperature are reported.

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Date submitted: 21 Nov 2008 Electronic form version 1.4