

Abstract Submitted
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Studies of broken time reversal symmetry states in high temperature superconductors using high resolution Sagnac interferometry ELIZABETH SCHEMM, HOVNATAN KARAPETYAN, Stanford University, JING XIA, California Institute of Technology, MARTIN M. FEJER, AHARON KAPITULNIK, Stanford University — Using a cryogenic fiber Sagnac interferometer, we measure polar Kerr effect to high precision in several high- T_c superconductors, concentrating on $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$. Previous work on $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ showed non-zero Kerr rotations on the order of $\sim 1 \mu\text{rad}$, appearing near the pseudogap temperature T^* and marking what appears to be a true phase transition. We continue this study on single crystals and oriented films to further understand the dependence of the observed Kerr signal on crystal direction, as well as to further probe the anomalous response of this effect to magnetic field training.

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