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**Kerr effect measurements in the pseudo-gap regime of LBCO and Pb-BSCO using high resolution Sagnac** HOVNATAN KARAPETYAN, VIKRAM NATHAN, RUIHUA HE, MAKOTO HASHIMOTO, ZHI-XUN SHEN, AHARON KAPITULNIK, Stanford University, HIROSHI EISAKI, Nanoelectronics Research Institute, AIST, Japan, JAKE KORALEK, JAMIE HINTON, JOE ORENSTEIN, Lawrence Berkeley National Laboratory, JOHN TRANQUADA, GENDA GU, MARKUS HUECKER, Brookhaven National Laboratory — Polar Kerr effect in several high-Tc superconductors systems was measured at zero magnetic field with high precision using a cryogenic Sagnac fiber interferometer with zero-area. We observed non-zero Kerr rotations of order  $\sim 1\mu\text{rad}$  appearing near the pseudogap temperature  $T^*$ , and marking what appears to be a true phase transition. In this talk we will review our work on  $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ ,  $\text{La}_{1.875}\text{Ba}_{0.125}\text{CuO}_4$  and  $\text{Pb}_{0.55}\text{Bi}_{1.5}\text{Sr}_{1.6}\text{La}_{0.4}\text{CuO}_{6+\delta}$ . In particular, in Pb-BSCO we observe an emergence of Kerr signal that coincides with ARPES data showing an abrupt change at  $T^*$  from a relatively simple one- band metal into a state with profoundly-altered electronic structure.

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