

Abstract Submitted  
for the MAR09 Meeting of  
The American Physical Society

**Nonequilibrium quasiparticle dynamics in single crystals of  $\text{Ba}_{1-x}\text{K}_x\text{Fe}_2\text{As}_2$**  DARIUS TORCHINSKY, MIT, G.F. CHEN, J.L. LUO, N.L. WANG, Beijing National Laboratory for Condensed Matter Physics, Institute of Physics, Chinese Academy of Sciences, NUH GEDIK, MIT — We report on measurements of the quasiparticle dynamics in single-crystals of  $\text{Ba}_{1-x}\text{K}_x\text{Fe}_2\text{As}_2$  in the superconducting state via ultrafast pump-probe spectroscopy. Quasiparticles are injected into the samples by ultrashort laser pulses. Once injected, they cause a reflectivity change of the sample at the laser frequency, allowing time-resolved optical measurements of their density. We describe the temperature and excitation density dependence of the quasiparticle recombination rate and discuss the implications of these measurements on the nature of the superconducting gap and the electron-phonon coupling in these materials.

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Date submitted: 23 Nov 2008

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