

Abstract Submitted
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Time-resolved infrared spectroscopy of superconducting NbTiN film near H_{c2} ¹ JUNGSEEK HWANG, University of Florida, HAIDONG ZHANG, University of Nebraska, DAVID H. REITZE, CHRISTOPHER J. STANTON, D.B. TANNER, University of Florida, G. LAWRENCE CARR, Brookhaven National Laboratory — We use subnanoseconds time-resolved, pump-probe infrared spectroscopy to study vortex dynamics of a conventional superconductor, Nb_{0.5}Ti_{0.5}N near H_{c2} . The measurements were performed at the National Synchrotron Light Source, Brookhaven National Laboratory; Picosecond pulses from a near-infrared Ti:sapphire laser were used as a pump and, subnanosecond pulses of infrared synchrotron radiation as a probe. We report detailed magnetic field dependences of the amplitude of photoinduced quasiparticles and the effective lifetime of the quasiparticles and also discuss vortex dynamics in the system near H_{c2} . Near H_{c2} , we observe an interesting deviation from the field-independent behavior of the effective lifetime at lower fields.

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