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Conductivity Dynamics in the Correlated Metallic State of  $V_2O_3$ M. LIU, B. PARDO, Boston University, Dept. of Physics, M.M. QAZILBASH, UCSD, Dept. of Physics, S.J. YUN, B.G. CHAE, B.J. KIM, H.T. KIM, Electronics and Telecommunications Research Institute, Korea, D.N. BASOV, UCSD, Dept. of Physics, R.D. AVERITT, Boston University, Dept. of Physics —  $V_2O_3$  is a strongly correlated electron material that undergoes a transition from antiferromagnetic insulator at low temperatures to a strongly correlated metal above ~140K. We report on time resolved spectroscopic studies of  $V_2O_3$  thin films where we have observed coherent oscillations in the far-infrared conductivity following excitation with a 35-fs optical pulse. The resultant ~100 ps conductivity oscillations result from the optically induced generation of strain which modulates the orbital overlap and hence the conductivity thus revealing a strong coupling of carriers to the lattice in the metallic state. This contrasts with other vanadates such as VO<sub>2</sub> where this effect is not observed. We will discuss the potential of  $V_2O_3$  as a candidate material for investigating photoinduced phase transitions.

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