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Anisotropic carrier transport induced by high-field terahertz pulses in $n-$doped InGaAs[1] F. BLANCHARD, INRS-EMT, Advanced Laser Light Source, Université du Québec, Varennes, Québec, Canada, F.H. SU, Department of Physics, University of Alberta, Edmonton, Alberta, Canada, L. RAZZARI, G. SHARMA, R. MORANDOTTI, T. OZAKI, INRS-EMT, Advanced Laser Light Source, Université du Québec, Varennes, Québec, Canada, M. REID, Department of Physics, University of Northern British Columbia, Prince George, British Columbia, Canada, F.A. HEGMANN, Department of Physics, University of Alberta, Edmonton, Alberta, Canada — We use ultrafast THz-pump/THz-probe techniques to study hot electron dynamics at high THz pump fields in $n-$doped InGaAs films. The transmission of the THz probe pulse increases at high THz pump fields for probe polarizations both parallel and perpendicular to the pump field. However, a significantly larger ultrafast modulation in the transmission of the THz probe pulse is observed in the parallel polarization case. We attribute this anisotropic behavior in THz probe pulse transmission to nonparabolicity in the conduction band that results in an anisotropic effective mass for carriers excited high in the band by the THz pump field.

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