Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

THz Emission from Graphite Surfaces CHEN XIA, JIE SHAN, Physics Department, Case Western Reserve University — Graphite formed by Van der Waals force between adjacent graphene sheets has been studied for more than six decades due to its relatively simple quasi-two-dimensional structure. Lately, because of its close relationship to carbon nanotubes and new physics originating from graphene's linear excitation spectrum and the 4-fold degeneracy graphitic materials have attracted much of research attention. However, still little is known about the high-freqency transport properties of these materials. In this work, we investigate graphite materials in THz regime by THz emission spectroscopy. Picosecond THz pulses were observed from a highly oriented pyrolytic graphite (HOPG) surface when it was illuminated by intenseultrafast optical pulses at an oblique angle. The emission was mostly p-polarized and increased linearly with pump fluence. Several potential mechanisms for the emission including surface nonlinearility will be discussed in the talk.

Chen Xia
Case Western Reserve University

Date submitted: 17 Dec 2008 Electronic form version 1.4