Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Detection of terahertz radiation from 410 GHz CMOS circuit and other high-frequency oscillators using a Fourier Transform Interferometer[1] EUNYOUNG SEOK[2], Department of Electrical and Computer Engineering, University of Florida, DANIEL J. ARENAS, Department of Physics, University of Florida, DONGHA SHIM, KENNETH K. O, Department of Electrical and Computer Engineering, University of Florida, DAVID B. TANNER, Department of Physics, University of Florida — Recently, a record-setting operating frequency of 410 GHz was reported for a CMOS circuit, fabricated using 45 nm technology. To measure the emission from this and related devices, we employed a Bruker 113v fourier transform interferometer. The radiation from an on-chip patch antenna attached to the 410 GHz push-push oscillator circuit was measured by placing the chip in the lamp housing of the interferometer. Emission was detected in the first and second harmonics of the oscillator fundamental. Power was estimated by comparison to that from quasi-blackbody sources (globar and mercury lamp). Possible applications will be discussed.

[1]Supported by the DOE through DE-FG02-02ER45984 and by the NHMFL.
[2]Now in Texas Instruments Inc.

Daniel J. Arenas
Department of Physics, University of Florida

Date submitted: 16 Dec 2008 Electronic form version 1.4