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Department of Physics and Astronomy

Colloquium

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Stevenson Center, SC4327

Terahertz Time-Domain Spectroscopy: Controlling Electric Fields on the Femtosecond Time Scale

Tony Heinz

Department of Physics, Columbia University, New York
e-mail: tfh3@columbia.edu

Pulsed lasers can now access time scales well below $100 \text{ fs} = 10^{-13} \text{ s}$. This has opened up a wide range of new experimental capabilities from x-ray generation to ultra-precise frequency metrology. In this talk, I will describe the application of these capabilities to controlling and measuring electric fields with femtosecond resolution. This possibility permits one to perform far-infrared spectroscopy directly in the time domain, gaining convenient access to a traditionally difficult part of the electromagnetic spectrum. Some of the distinctive applications of this new experimental approach to probing electrical transport in solids and nanostructures will be presented.

If you would like to meet the speaker please contact Tobias Hertel (phone 322-2864, e-mail: tobias.hertel@vanderbilt.edu or via <http://people.vanderbilt.edu/~tobias.hertel>)