

Nonlinear response of semiconductor systems under intense THz excitation

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Intense narrowband terahertz pulses from the FELBE free-electron laser facility and a complementary table-top high-field THz source are utilized to study nonlinear excitation regimes of various degrees of freedom in semiconductors. In this talk we present several recent examples including impurity transitions in boron doped Si [1], intersubband transitions in Ge/SiGe quantum wells [2] and plasmons in InGaAs nanowires [3,4].

[1] F. Meng et al., *Phys. Rev. B* **102**, 075205 (2020).

[2] C. Ciano et al., *Optics Express* **28**, 7245 (2020).

[3] D. Lang et al., *Nanotechnology* **30**, 084003 (2019).

[4] R. Rana et al., *Nano Lett.* **20**, 3225 (2020).

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