



EINLADUNG zum IFP-SEMINAR

Photocurrents induced by structured terahertz radiation

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Host: Andrei Pimenov
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Ort: TU Wien, Freihausgebäude
Wiedner Hauptstraße 8-10, 1040 Wien
Seminarraum DA Grün 06B (grüner Bereich, 6. OG)

Abstract:

Structured radiation, such as twisted beams carrying orbital angular momentum, has a great potential for the use in optics and optoelectronics. Here, we explore the interaction of structured terahertz radiation with two-dimensional electron systems and show that the structured radiation can drive dc electric currents and currents at double frequency. The currents can be related to the spatial gradients of the intensity, Stokes polarization parameters, and phase of the electromagnetic field. We discuss the physics of such effects and the microscopic mechanisms of the current generation.

A.A. Gunyaga, M.V. Durnev, and S.A. Tarasenko, Photocurrents induced by structured light, Phys. Rev. B 108, 115402 (2023).