GRK 2905 Ultrafast Nanoscopy

Colloquium

Friday, Nov 21, 2025
14:00 h
RUN Auditorium

Prof. Dr. Miriam Serena Vitiello

NEST, CNR - Istituto Nanoscienze
and Scuola Normale Superiore, Pisa, Italy

Detector-less near-field quantum nanoscopy in the far-infrared

Near-field nanoscopy at terahertz (THz) frequencies (wavelength range, 3 mm – 3 μm) enables studies of objects over a large span of scales – from 300 μm to the nanometer scale – and disciplines, from physics to biological science. The talk will show the potential of a series of near-field nanoimaging approaches that, while exploiting the same core building block (a detector-less QCL-based nanoscope), rely on different physical mechanism for imaging reconstruction. I will also highlight their potential for tracing the real-space propagation of THz-frequency polaritons in isotropic and anisotropic nanomaterials and meta-elements.

Coffee