

Physikalisches Kolloquium



Thursday, 28.01.2021, 16:15
Digital Lecture Hall via Zoom

Dr. Markus Ilchen, Experimentalphysik IV, Universität Kassel:

Introductory Talk: Dichroic and Asymmetric Matter Interaction with Free-Electron Laser Pulses

Abstract

Short-wavelength free-electron lasers can provide highly intense X-ray flashes with several mJ pulse energy on ultrashort timescales in the femtosecond and recently sub-femtosecond regime. They have substantially contributed to shaping the field of ultrafast science as well as pushing the nonlinear sciences into the X-ray regime. With the ultimate goal to directly monitor molecular dynamics in chiral systems from element-specific observer sites, several prerequisites regarding new routes in electron spectroscopy, undulator-based polarization control, nonlinear X-ray science, and control of ultrashort X-ray pulses have to be established. The presentation will sketch the scientific and technical contributions along this way, from the first highly intense circularly polarized pulses at an XFEL, towards their applications for exploring nonlinear dichroic phenomena, as well as the diagnostic and scientific efforts to employ these pulses for time-resolving studies.

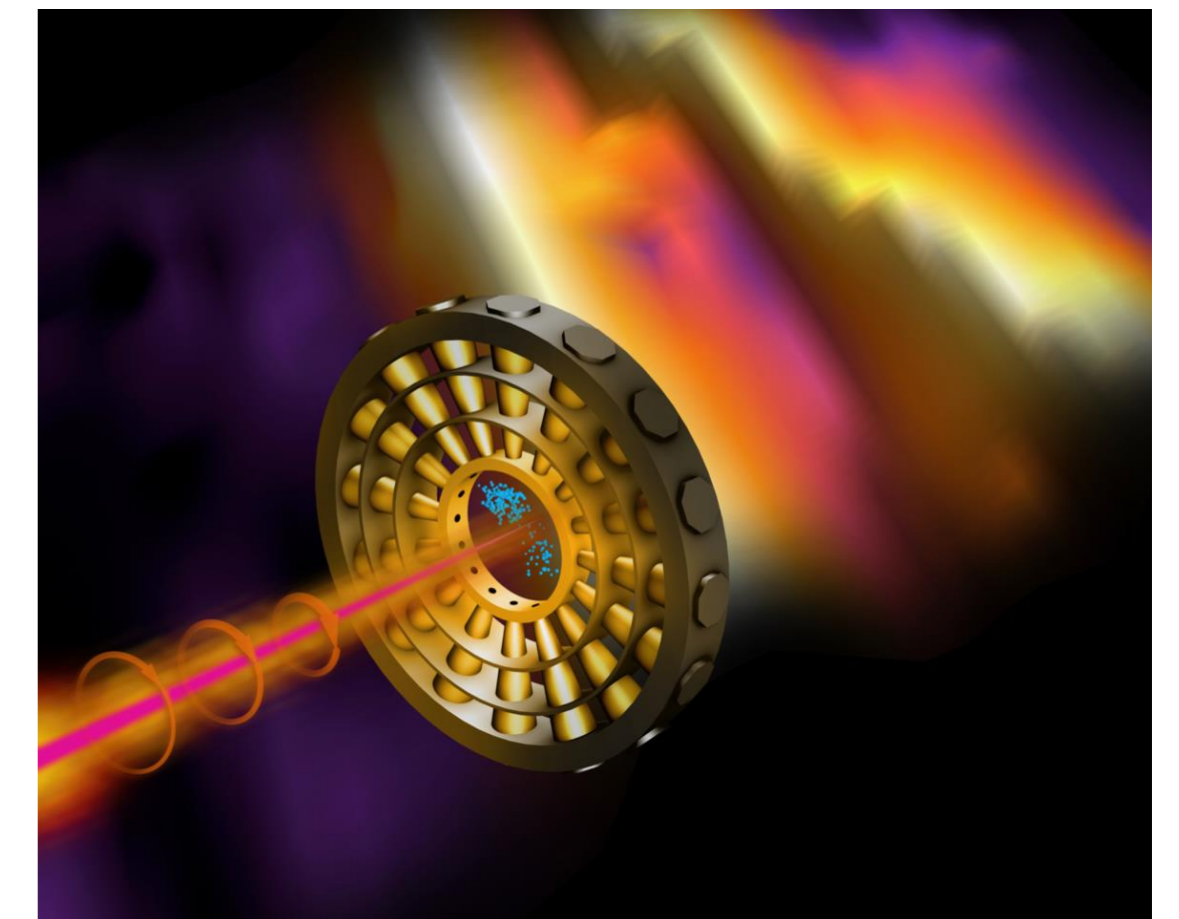


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All of you interested in physics are cordially invited!