



27th March 2026 – 14:00

CFEL, Building 99 – Seminar Room I-III

Vincent Wanie

DESY

Ultrafast Chirality: Towards Time-Resolved Molecular Recognition

In this talk, I will discuss experimental advances in PhotoElectron Circular Dichroism (PECD), a chiroptical effect that provides access to both the static and dynamic properties of chiral molecules in the gas phase. As part of this effort, ultrashort femtosecond UV light sources have been developed, enabling time-resolved PECD spectroscopy with high temporal resolution. These developments will be discussed in the context of recent work demonstrating new approaches to capture ultrafast chiral dynamics.

Building on these developments, I will outline the concept of a next-generation chiroptical platform that will be established at DESY, aimed at identifying signatures of molecular recognition between chiral partners. By combining advanced ultrafast laser techniques, charged-particle detection, and controlled molecular samples, this platform aims to reveal how chirality-dependent interactions emerge from the coupled motion of electrons and nuclei on their fundamental timescales, providing new insights into the microscopic origins of molecular recognition.