

Colloquium

Short Time Spans in Ultrafast Science

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Attosecond Science and increasingly ultrafast X-ray science has been changing our perspective on microscopic phenomena on the scale of bound electron motion. Recent debates concern attosecond time delays in photoionization and electron tunneling. These examples demonstrate the need for an understanding, which can only come from theoretical concepts beyond the solution of the time-dependent Schrödinger equation. They also illustrate the complementary aspect of attosecond light pulses: as a mean to time-resolve ultrashort processes and as a source of broadband coherent light.

This talk will focus on the time-resolving photo processes. How long does photoionization take? We will discuss the concepts behind the streaking measurements of XUV photoionization and the attoclock measurements of tunneling ionization and propose a concept quantum-classical fidelity, to determine ultrashort time spans.

In the last part of the talk we scrutinize time itself and ask why it has classical character, even in the Schrödinger equation.

Friday, Mar 18th 2016

11:30 AM (Tea/Coffee at 11:15 AM)

Seminar Hall, TCIS