

11th January 2016 - 2:00 p.m.
CFEL-bldg. 99, seminar room IV

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Following the dynamics of strong-field tunnel ionization

One of the most intriguing consequences of the wave nature of matter is quantum tunneling. In the course of the development of lasers with high intensities, the experimental study of strong-field induced ionization has become feasible. Here, we have employed transient absorption spectroscopy with attosecond time resolution (ATAS) to study the dynamics of strong-field tunnel ionization in xenon. In accordance with theoretical calculations we observe clear sub-cycle ionization features that contain signatures of tunneling and ground-state polarization as well as an effective time delay between the emergence of the outermost spin-orbit split states ($5p_{1/2}$ and $5p_{3/2}$). The origin of the latter is still under debate.

