VA 1 Gaede-Preisträger-Vortrag

Zeit: Montag 09:45–10:30 Raum: TU EB301

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Femtosecond dynamics of adsorbate-surface interactions studied by means of time-resolved photoelectron spectroscopy — •Michael Bauer — Fachbereich Physik, TU Kaiserslautern, Erwin-Schrödinger-Str. 46, 67663 Kaiserslautern

Time-domain studies of dynamical processes evolving on a subpicosecond timescale generally require optical pump-probe schemes using pulsed femtosecond light sources. In combination with photoelectron spectroscopy a direct access to ultrafast surface processes is possible. Particularly time-resolved Two-Photon Photoemission(2PPE) has been proven to be very successful in studying the dynamics of the electron relaxation of excited electronic surface states, such as image potential states and adsorbate resonances. For the latter case, the alkali adsorption on noble metal surfaces is an ideal model system for investigations regarding the different decay channels of adsorbate excitations. In a time-resolved UPS scheme that allows for probing of the changes in the valence electron distribution at a surface, we can furthermore study the ultrafast dynamics related to the nuclear motion of the adsorbate and changes in its chemical state during the course of a chemical reaction. This highly promising method has become possible just recently due to the development of laser-driven short-pulse EUV sources. In my talk I will report on experimental results regaring the femtosecond dynamics of adsorbate-surface interactions as probed by meaus of these two techniques.