

O 45 Invited talk Föhlisch

Time: Friday 10:15–11:00

Room: TRE Phys

Invited Talk

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Surface electron dynamics on the atomic scale — ●ALEXANDER FÖHLISCH — Institut für Experimentalphysik, Universität Hamburg, Luruper Chaussee 149, 22761 Hamburg

Ultra fast electron dynamics play a decisive role in processes like photo- and electrochemistry as well as in molecular electronics and single electron devices. If we are interested in electron transfer processes in complex systems it is of equal importance to address the temporal evolution of the electron wave packet and the question at which atomic center an electron resides before delocalization through charge transfer to neighboring atoms occurs. With element specific synchrotron based soft x-ray spectroscopy, called core hole clock spectroscopy, we can accomplish this. For adsorbates on surfaces we could show how the femtosecond electron transfer process depends in fine detail on the surface projected band structure of the substrate. Furthermore, we can directly observe on an attosecond timescale charge transfer dynamics originating from an atomically localized state by making use of extremely fast Coster Kronig decay processes of core-excited states.