

SEMINA

SCIENCE

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Modelling ultrafast X-ray spectroscopies

The use of light is nowadays the fastest way to observe and control electronic motion. In addition, modern X-ray sources provides the possibility to track changes with site selectivity. In this talk we will show some of our recent works in time-resolved x-ray photoelectron spectroscopy (Tr-XPS) in order to study the effects of Auger decay, molecular fragmentation, vibrational cooling and hydrogen loss on the time-dependent chemical shifts. Also, we will show our advances in the development of a real-time dynamics code for materials, which enables us to model realistic attosecond X-ray spectroscopy experiments in modern quantum materials.