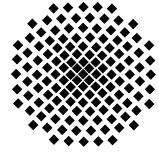


Stuttgarter Physikalisches Kolloquium

Max-Planck-Institut für Festkörperforschung
Max-Planck-Institut für Intelligente Systeme
Fachbereich Physik, Universität Stuttgart

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17.15 Uhr

Hörsaal 2 D5

Stuttgarter Max-Planck-Institute, Heisenbergstraße 1, 70569 Stuttgart-Büsnau

Interface physics of complex oxide heterostructures: Insights from X-ray spectroscopy

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Abstract

Transition metal oxides (TMO) display a fascinating variety of cooperative phenomena ranging from high-temperature superconductivity to charge and orbital ordering to multiferroicity. Recently, it has become possible to combine different TMOs in the form of epitaxially grown heterostructures, opening new ways of controlling and manipulating these many-body ground states or even induce novel interface properties non-existent in the bulk materials. A microscopic understanding of the underlying electronic structure requires experimental methods with specific interface sensitivity. Recent developments in x-ray based spectroscopies, in particular high-energy photoemission (HAXPES, SX-ARPES) and resonant inelastic X-ray scattering (RIXS), have turned out to be particularly useful for this purpose. I will discuss several examples of how these techniques are employed in the detailed characterization and investigation of oxide hybrid- and heterostructures.