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Nichtgleichgewichtsdynamik kondensierter
Materie in der Zeitdomäne

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A theorist's view on complex oxides

Prof. Dr. Claudia Draxl

HU Berlin

Light-matter interaction is an exciting playground for exploring a wide variety of physical phenomena that can be quantitatively investigated with high-level theoretical methodology. With selected examples, I will show how these methods can be used to understand excitations in complex oxides: They concern, for instance the wide gap semiconductor Ga_2O_3 , where atom-resolved core spectroscopy can reveal signatures of the local environment, or polymorphism leads to distinct features in resonant inelastic x-ray scattering (RIXS) spectra. Another emerging material for electronic applications is the perovskite BaSnO_3 , where a fully consistent picture of its spectral features is obtained by in-depth analysis from both theory and various experimental probes. Interfaces between this non-polar material and the polar perovskite LaInO_3 , in turn, give rise to 2D electron and hole gases that can be tuned by structural features or external stimuli.

Für diese Zeit steht eine Kinderbetreuung nach vorheriger Anmeldung zur Verfügung.

Contact: Prof. Dr. Björn Sothmann, Faculty of Physics
Phone: +49 (203) 37-93330 / Mail: bjoerns@thp.uni-due.de