



# TRR 80 Sonderseminar

Am Dienstag, den 19. März um 16:00 Uhr

spricht

***Prof. Dr. Sergey Artyukhin***

**Italian Institute of Technology (IIT), Genoa**

über das Thema

***Sliding domain walls in ferroelectrics and multiferroics***

Recent advances in scanning impedance microscopy made it possible to map lattice vibrations on the nanoscale and identify domain-wall localized phonons and their contribution to dielectric anomalies. Lowest energy modes are excited when the field favors one of the domains across the wall. However, 71 degree domain walls in BiFeO<sub>3</sub> were found to defy this condition. Symmetry breaking at the surface and wall tilting along with interactions of the ferroelectric polarization with strains are shown to be responsible for this peculiar behavior. In addition, the soft domain wall-localized modes and surrounding long-ranged strain textures can lead to dramatic mechanic softening of the material. The second part of the talk focuses on ultrafast phase transitions related to melting and reconstruction of dimers in IrTe<sub>2</sub> and the spin density wave in Cr. These phase transitions can be triggered by laser pulses, and interactions between electronic and lattice degrees of freedom can be studied on their natural timescales.

Gäste sind herzlich willkommen.

Der Vortrag findet im Seminarraum S-403, Institut für Physik,  
Universität Augsburg statt.

Gastgeber: Prof. Dr. István Kézsmárki  
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