MA 21 Hauptvortrag Moshnyaga

Zeit: Dienstag 09:45–10:15 Raum: TU H1028

Hauptvortrag MA 21.1 Di 09:45 TU H1028

Lattice strain and disorder effects in magnetotransport of manganite films — •Vasily Moshnyaga — I. Physikalisches Institut, Universitaet Goettingen, Friedrich-Hund-Platz1, 37077 Goettingen

The properties of perovskite manganites are governed by complex phase diagram with a number of phase transitions as a function of doping level, temperature, pressure and magnetic field. Moreover charge-, spin- and lattice degrees of freedom can compete yielding to electronic phase separation (EPS). We studied magnetotransport in thin manganite films of La-(Ca or Sr)-Mn-O (L(CS)MO), prepared by a metalorganic aerosol deposition (MAD) technique. Layer-by-layer (LL) and 3D island film growth were realized by MAD, which results in different microstructure and magnetotransport. Nanocomposite L(CS)MO:MgO films were shown to be promising for tuning both intrinsic (CMR) and extrinsic (TMR) properties. In addition very large photoinduced resistivity and optical second harmonic generation were observed in LCMO films. These different effects are discussed in terms of lattice strain and disorder, which by modifying the double exchange and electron-lattice interaction on the nm-scale can control EPS in manganites.