Karlsruher Institut für Technologie

Fakultät für Physik

Physikalisches Kolloquium

Bernhard Holzapfel, KIT

»Tailored Superconductors for Power and Magnet Applications«

Einführung: J. Schmalian

High field magnet applications like MRI, NMR and accelerator magnets are one of the major success stories of superconductivity and only possible by tailoring superconducting materials on various length scales. Besides the conventional low temperature superconductors, cuprate based High Temperature Superconductors (HTSC) and new superconducting materials offer significant advantages and improvements in modern magnet/power applications and are currently on the way into commercial products. In this talk I will discuss and review firstly the basics and current status of superconducting material and wire development as well as the realization of HTSC based applications for high power urban transmission lines, high power density superconducting motors and high static magnetic field coils beyond 30T. Secondly I will address the main basic requirements for new superconducting materials with potential applicability and discuss the prospects of the recently discovered Fe-based superconductors for power and magnet applications based on single crystalline thin film electrical transport properties in magnetic fields.

Freitag, 02.12.2016, 15:45 Uhr,

KIT, Campus Süd,
Otto-Lehmann-Hörsaal, Physik-Flachbau (Geb. 30.22).
Anschließend Nachsitzung im Gastdozentenhaus „Heinrich Hertz“

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