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Auditório CTN



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BACKGROUND

Mark Kartsovnik received his Ph.D. degree in Physics from the Institute of Solid State Physics, Chernogolovka, Russia, in 1990 under the direction of Igor Schegolev. After that he worked at the Institute of Solid State Physics consecutively as a researcher and a senior researcher till 1999.

He spent one year as a JSPS postdoctoral fellow at Kyoto University in 1993-1994, working with Takehiko Ishiguro. Between 1996 and 1999 he was working as a visiting scientist at the Walther-Meissner-Institute for Low-Temperature Research in Garching, Germany. Since 2000 he has been a permanent member of the scientific staff of the Walther-Meissner-Institute. His research interests include electronic properties of lowdimensional organic conductors, in particular, high-magnetic-field phenomena in these materials.

Layered organic metals in high magnetic fields

Abstract

To understand the variety of correlation-driven electronic states and spectacular phenomena observed in layered organic charge-transfer salts, a thorough knowledge of the underlying normal metallic state is indispensable. High magnetic fields have proved to be a very powerful tool for probing and controlling the conducting electronic system in organic metals. Besides the conventional magnetotransport effects observed in usual three-dimensional or in purely two-dimensional electronic systems, our quasi-two-dimensional conductors exhibit a number of novel features, especially in the interlayer magnetoresistance, which enable a simple and accurate determination of their Fermi-surface geometries as well as other key parameters of charge carriers. Here I will give a brief overview of these effects and present some examples of how they are used for characterization of the conducting system in organic metals in the presence of various electronic instabilities.

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