JOHANNES GUTENBERG UNIVERSITÄT MAINZ

Seminar: Hard Condensed Matter Theory

Room: Galileo room, 01-128 (Staudinger Weg 9)
Time: Tuesday, 07.11.2017, 14:00

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Gigantic negative magnetoresistance in a disordered Topological Insulator

Recently the phenomenon of negative magnetoresistance (MR) is attracting renewed interest due to its occurrence in Weyl semimetals because of the chiral anomaly. In other systems a large MR typically relates to magnetism. In this talk a novel mechanism leading to a large negative MR will be presented that is based not on magnetism, but on disorder. In the newly synthesized bulk-insulating topological insulator material $T1Bi_xSb_{1-x}Te_2$ we find a suppression of the resistivity by up to 98 % in 14 T at low temperature. From transport data and numerical simulations, this gigantic negative MR is understood by a percolation of charge puddles formed in the disordered bulk.

All interested are cordially welcome!

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