

SFB 608

Einladung zum Kolloquium

Ort: Universität zu Köln
II. Physikalisches Institut, Seminarraum 201

Zeit: 23.Mai 2007, 14:30 Uhr

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Thema: Coulomb Blockade and Transport in a
Chain of 1-dimensional Quantum Dots

A long one-dimensional wire with a finite density of strong random impurities is modelled as a chain of weakly coupled quantum dots. At low temperature T and applied voltage V its resistance is limited by “breaks”: randomly occurring clusters of quantum dots with a special length distribution pattern that inhibits the transport. Due to the interplay of interaction and disorder effects the resistance can exhibit T and V dependences that can be approximated by power laws. The corresponding two exponents differ greatly from each other and depend not only on the intrinsic electronic parameters but also on the impurity distribution statistics.

gez. Prof. A. Rosch