Universität Leipzig
Fakultät für Physik und Geowissenschaften
Institut für Theoretische Physik

STP - Gruppenseminar

Am Mittwoch, dem **27.02.13 um 10:00 Uhr** spricht

Y. Dinaii
(Weizmann Institute, Israel)

über

Phase lapses and dephasing in quantum Hall interferometers

In this talk I will discuss the phenomena of dephasing and phase lapses as they occur in two setups that operate in the quantum Hall regime with filling factor 2. The setups consist of a quantum dot (QD) and an electronic Mach-Zehnder interferometer (MZI). The concept of dephasing, i.e. loss of coherent transport, will be introduced, and then the two setups will be discussed. In the first setup transport through a chiral channel is affected by charge fluctuations in a nearby quantum dot [1,2]. These charge fluctuations dephase the transport through the chiral channel, and cause abrupt jumps in the transmission phase through that channel, namely phase lapses. Recent experimental results related to this setup will be also discussed [2]. In the second setup transport through a quantum dot is analysed. Specifically, the conditions under which transmission phase lapses occur are studied. It turns out that the physics is substantially different from that of the transmission phase through a QD in the absence of a magnetic field. Specifically, it will be shown that certain degrees-of-freedom of the QD act as a dephasor to the coherent transport through the QD.

Ort: ITP, Raum 211

Interessenten sind herzlich eingeladen!

gez. Prof. Rosenow