



# Seminarankündigung

**Donnerstag, 09. Dezember 2010**

**15:00 Uhr**

**ZNN, Seminarraum**

## **“Huge metastability and reentrant phases in a magnetic two-dimensional hole system”**

Mn-modulation-doped InAs quantum wells reveal an insulator-to-metal transition that is driven by a magnetic field and dependent on bias voltage, with abrupt and hysteretic changes of resistance over several orders of magnitude. These phenomena coexist with the quantized Hall effect in high magnetic fields. We show that the exchange coupling between a hole and the parent Mn acceptor produces a magnetic anisotropy barrier that shifts the spin relaxation time of the bound hole to a 100 ns range in compressively strained quantum wells. This bistability of the individual Mn acceptors explains the hysteretic behaviour while opening prospects for information storing and processing.

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