



## Sonderforschungsbereich 631

Festkörperbasierte Quanteninformationsverarbeitung

# Seminar Announcement

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Fakultät für Physik der Universität Regensburg

Universitätsstr. 31, 93053 Regensburg

**Sprecher:** Dr. Nicola Paradiso  
NEST, Istituto Nanoscienze-CNR and Scuola  
Normale Superiore, Pisa, Italy

**Ort:** Seminarraum, PHY 9.2.01

**Zeit:** Donnerstag 01. Dezember 2011, 13.30 Uhr

**Thema:** Quantum Hall circuits with variable geometry:  
study of the edge structure and equilibration by  
Scanning Gate Microscopy

**Abstract:**

I demonstrate an innovative quantum Hall circuit with variable geometry employing the moveable electrostatic potential induced by a biased atomic force microscope tip. I exploited this additional degree of freedom to measure the width of incompressible stripes in both integer and fractional channels and to identify the microscopic mechanisms that allow two co-propagating edge channels to equilibrate their charge imbalance. This work provides also an experimental realization of a beam mixer between co-propagating edge channels, a still elusive building block of a recently proposed new class of quantum interferometers.

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