SFB/TRR 21 - Colloquium

14. Januar 2011, Stuttgart

**Stefan Mendach**
(Universität Hamburg)

## Spin-Wave Interference in Three-Dimensional Rolled-Up Ferromagnetic Microtubes

In my talk I will report on spin-wave excitations in rolled-up Permalloy-semiconductor microtubes. We prepare these structures from strained Py / GaAs / InGaAs multilayers which reduce their strain energy by self rolling into a rolled-up carpet-like micro object after being released from the substrate. In microwave absorption experiments we find a series of quantized azimuthal modes which arise from the constructive interference of Damon-Eshbach-type spin waves propagating around the circumference of the Permalloy semiconductor microtubes. The mode spectrum of this novel type of spin wave resonator can be tailored by the rolling radius and number of rolled-up layers as well as by the external magnetic field or mechanical deformation.

**14. Januar 2011, 14:00 Uhr**

**Universität Stuttgart, NWZII, Raum 2.136**
**Pfaffenwaldring 57, 70569 Stuttgart**

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