



## Sonderforschungsbereich 631

Festkörperbasierte Quanteninformationsverarbeitung

# Seminar Announcement

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Fakultät für Physik der Universität Regensburg

Universitätsstr. 31, 93053 Regensburg

**Sprecher:** Prof. Wiebke Guichard  
Université Joseph Fourier Grenoble 1  
Institut Néel

**Ort:** Seminarraum, PHY 9.2.01

**Zeit:** Donnerstag 24. Januar 2013, 13.30 Uhr

**Thema:** Coherent quantum phase slips in Josephson junction chains

**Abstract:**

A lot effort has been undertaken to realize quantum phase-slip junctions with nanowires in the view of the realization of a frequency-to-current conversion device. In my talk I will explain the unique advantages provided by Josephson junction chains for the design of a quantum phase-slip junction.

I will give an overview of our experimental results [1,2,3,4] on coherent quantum phase-slips occurring in chains containing between 6 and 400 Josephson junction. I will discuss the current limitations for the realization of a frequency-to-current conversion device.

[1] I. Pop et al, Nature Physics, 6, 589, (2010).

[2] I. Pop et al, Phys. Rev B 85, 094503, (2012).

[3] W. Guichard and F. Hekking, Phys. Rev.B**81**, 06450 (2010)

[4] "Experimental evidence of a coherent charge state induced by coherent quantum phase-slips", G. Rastelli et al, publication in preparation.

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