

# SFB 608

## Einladung zum Kolloquium

- Ort:** Universität zu Köln  
II. Physikalisches Institut, Seminarraum 201
- Zeit:** 04.April, 2007, 14:30 Uhr
- Sprecher:** Nic Shannon  
Bristol University UK
- Thema:** How to have fun with frustrated ferromagnets

The search for a true quantum "spin liquid" - a quantum magnet which remains disordered at the very lowest temperatures has been central to research on quantum magnets for more than three decades. Following Anderson, most models of quantum spin liquids proposed to date have been based on frustrated antiferromagnetic interactions. The resulting spin liquid states involve strong singlet bonds between spins, which give rise to a gap in the spin excitation spectrum. None the less, the best characterized experimental realization of a quantum spin liquid is believed to occur in two-dimensional films of solid He III, where the interactions between spins are predominantly ferromagnetic, and the resulting state is gapless. This raises the interesting question of whether the breakdown of long ranged ferromagnetic order offers a new route exotic magnetic ground states ? In this talk I review experimental results on unconventional magnetic order in (quasi) two-dimensional spin systems with predominantly ferromagnetic interactions, and present recent theoretical results for novel order parameters in related models [1,2].

[1] Momoi et al., Phys. Rev. Lett. 97, 257204 (2006)

[2] Shannon et al., Phys. Rev. Lett. 96, 027213 (2006)

Gez. Prof. M. Vojta