

**Colloquium**  
**Dahlem Center for Complex Quantum Systems**

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**Messy magnets and dirty superfluids**

**Location:** Hörsaal A (1.3.14)

**Time:** Monday, May 14th, 2012, 10:00 c.t.

**Abstract:**

Magnets and superfluids provide the simplest examples of symmetry breaking and correlations in interacting quantum systems. When disorder is thrown into the mix, particularly in low-dimensional quantum systems, novel and universal behavior often emerges. In my talk I will first explore some surprising effects of disorder in systems of non-interacting electrons, and magnetic chains. I will then focus on the superfluid-insulator transition for interacting bosons in a disordered environment. Recent research on this system has brought about a new understanding of superfluidity and its demise in low-dimensional disordered bosonic systems.