



中心系列讲座 **ICQM Weekly Seminar Series**

**“Emergent Particles and Fields in Quantum Spin Liquids and How to Probe Them”**



**Yi Zhou ( )**  
Department of Physics,  
Zhejiang University

**Time: 4:00pm, Sept. 28, 2011 (Wednesday)**

**2011 9 28**

**4:00**

**Venue: Room 607, Conference Room A , Science Building 5  
607**

**Abstract**

In this talk, I shall introduce quantum spin liquids as emergent phenomena in Mott insulators. Novel charge neutral, spin 1/2 particles emerge at low energy scale in quantum spin liquids, which are so called spinons. Usually, spinons are accompanied with gauge fields. But all these new particles and fields are totally absent in the Hamiltonian that describes the initial systems. Then I propose to use ultrasonic attenuation to measure the spinon mass and lifetime. Furthermore, transverse ultrasonic attenuation is a direct probe of the onset of pairing and may reveal the existence of the U(1) gauge field.

**About the Speaker**

1

2009 7

1998 7

2004

Mott