



中心系列讲座 ICQM Weekly Seminar Series

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



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

时间: 2011年9月28日 (周三) 下午4:00

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

地点: 理科五号楼607会议室

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

周毅，浙江大学物理系特聘研究员。1998年7月本科毕业于清华大学物理系；2004年1月于清华大学高等研究院获得博士学位；之后在德国、香港等地做博士后研究和访问学者；于2009年7月加入浙江大学物理系。主要研究方向为量子多体问题和理论凝聚态物理。目前的研究兴趣在于在探索Mott绝缘体、非常规超导体、量子磁体等凝聚态系统中的新奇量子现象。