ICQM Seminar

Quantum computing with spins and photons

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Time: 4:00 pm,March.4, 2013(Monday)
时间：2013年3月4日（周一）下午 4:00
Venue: Conference Room A (607), No. 5 Science Building
地点：理科五号楼607会议室

Abstract

In this talk, I will describe several experiments demonstrating simple quantum computation primitives using multi-photon entanglement and semiconductor quantum dots. I will start with a general introduction to the field of linear optical quantum computing, and move to experiments using parametric down-conversion that have demonstrated six-, eight-photon entanglement and Shor's factoring algorithm, followed by a discussion of the challenges of making this approach scalable. In the second part of the talk, I will switch to solid-state quantum system - GaAs/InAs quantum dots, and show our experimental efforts in generating highly indistinguishable resonance fluorescence single photons which find wide applications in optical quantum computing, probing spin dynamics, and single-shot optical spin readout.

Reference: Nature Nanotech 2012.262, Rev. Mod. Phys 77, 848 (2012), Nature Photonics 6, 225 (2012), Nature 467, 297-300 (2010)

About the Speaker

陆朝阳，英国剑桥大学博士，中国科学技术大学教授。1982年12月生于浙江东阳，2011年入选首批中组部“青年千人计划”，2012年入选国家自然科学基金优秀青年项目。在Rev. Mod. Phys. (1篇)，Nature (2篇)，Nature Physics (3篇)，Nature Photonics (2篇)，Nature Nanotechnology (1篇)，PNAS (3篇)，Physics Reports (1篇)，Phys. Rev. Lett. (6篇)等国际学术期刊发表了26篇论文，被SCI引用840多次，其中第一作者论文单篇引用最高300多次。研究成果被Nature杂志、英国BBC、IOP、APS、新科学家、科学美国人等国际科学媒体广泛报道。第一作者和通讯作者成果两次入选年度中国科技十大进展新闻。