PAP Seminar Announcement

Probe topological phases of matter in cold atoms
By
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Date: 7 July 2015, Tuesday
Time: 11.00am to 12.00pm
Venue: Hilbert Space (PAP-02-02)
Host: Assoc Prof Chew Lock Yue

Abstract
Topological phases of matter are novel phases beyond the Landau theory of symmetry breaking. Since a few seminal theoretical works and experimental discoveries about a decade ago, the topic has emerged to be a prominent field with an ever-growing reach and influence. Atomic systems have recently joined in the adventure from the perspective of quantum simulation. Exciting and promising progress has been made in both theory and experiment, complementing the condensed matter systems.

In this talk, I will first give an introduction to the theoretical aspect of topological insulators. I will then focus on the paradigm of quantum simulation, which is to control and manipulate cold atom systems to emulate topological phases. Some recent experimental works will be discussed, and I will mention some of our theoretical works in this direction.

Short Biography
Shengtao Wang received his B.Sc. in physics from Nanyang Technological University in 2011. In his undergraduate studies, he was supervised by Prof. Koh Tieh-Yong in the earlier years and worked with Prof. Chew Lock Yue and Prof. Kwek Leong Chuan on his final year project on entanglement transformations. He then moved to the University of Michigan-Ann Arbor for his graduate study and is currently working with Prof. Luming Duan on atomic systems, topological phases, and many-body physics.