Title: **Detecting Majorana fermions in fully gapped and nodal topological superconductors**

Speaker: **Prof. Kam Tuen Law**
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Time: **3:15pm, Wednesday, June 5, 2013**

(2:45~3:15pm, Tea, Coffee, and Cookie)

Venue: **Conference Hall 322, Science Building, Tsinghua University**

Abstract

An important progress has been made recently that zero bias conductance peaks (ZBCPs) in Andreev reflection type experiments, which are possibly due to Majorana fermions, have been observed in superconductor/semiconductor heterostructures. However, recent experiments cannot rule out other possible origins of the enhancement local Andreev reflections.

In this talk, we show that two spatially separated but strongly coupled Majorana fermions can strongly enhance crossed Andreev reflection amplitudes between two spatially separated leads, which are connected to the two Majorana fermions separately. The resulting strong current-current correlations and shot noise can be used to detect the non-local properties of Majorana fermions.

The creation and detection of Majorana fermions in the so-called DIII class topological