THE UNIVERSITY  OF HONG KONG

*Institute of Mathematical Research*
*Department of Mathematics*

# GEOMETRY SEMINAR

## Generalized Witten Genera and Anomalies

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**Abstract**

The Witten genus is formally the equivariant index of the $S^1$-equivariant Dirac operator on the free loop space. If the anomaly $p_1/2$ vanishes, then the Witten genus is an integral modular form. We generalize the Witten genus to spin$^c$ situation and find new anomaly conditions (the string$^c$ condition) to obtain modularity. On the other direction, we consider the mod 2 Witten genus on $8k$+1 and $8k$+2 dimensional manifold and verify the mod 2 modularity on the string complete intersections. This is joint work with Qingtao Chen and Weiping Zhang.

Date: February 24, 2012 (Friday)

Time: 11:00am – 12:00noon

Place: Room 210, Run Run Shaw Bldg., HKU

*All are welcome*