THE UNIVERSITY   **OF HONG KONG**

Institute of Mathematical Research
Department of Mathematics

COLLOQUIUM

Towards perturbative topological field theory on manifolds with boundary

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Date: February 26, 2013 (Tuesday)

Time: 4:30pm – 5:30pm

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

Abstract

We will explain a hidden algebraic structure on cochains and cohomology of a simplicial complex arising from certain simplicial topological field theory. Next we will introduce simplicial one-dimensional Chern-Simons theory, as an Atiyah's TFT on triangulated 1-cobordisms, consistent with simplicial aggregations and satisfying a version of Batalin-Vilkovisky master equation. Finally, we will explain the program of extending our results to more general TFTs in higher dimension, in particular the extension of Batalin-Vilkovisky symplectic homological formalism to TFTs on manifolds with boundary. As a byproduct of the latter construction, one obtains a homological description for certain class of (derived) algebro-geometric moduli spaces (e.g. moduli space of local systems) and for their geometric quantization.

All are welcome