Department of Mathematics

University of Notre Dame

Pelle Steffens - University of Amsterdam

TOPOLOGY SEMINAR

Guest Speaker: Pelle Steffens
University of Amsterdam

Date: Tuesday, January 24, 2017
Time: 2:30 PM
Location: 258 Hurley Hall

Lecture Title:

Rozansky-Witten Theory: Towards an Atiyah-Segal TQFT from BV-BFV quantization.

Abstract

The derived/homological methods of Batalin and Vilkovisky are generally regarded as the most powerful approach to quantizing a gauge theory while respecting its symmetries; accordingly, the technique lies at the heart of most modern mathematical treatments on perturbative Quantum Field Theory (see Costello-Gwilliam for example). Recently, Cattaneo, Mnev and Reshetikhin extended these ideas to topological gauge theories on manifolds with boundary, whose quantization would lead to TQFT's (valued in topological chain complexes) satisfying the Atiyah-Segal axioms. The first hour will serve as in introduction to these concepts , while in the second hour we wil see this construction at work in the example of Rozansky-Witten theory, an AKSZ TQFT (think odd Chern-Simons) connecting holomorphic symplectic geometry with invariants of rational homology 3-spheres.