

TOPOLOGY SEMINAR

Guest Speaker: Ivan Contreras
University of Illinois at Urbana-Champaign

Date: Tuesday, October 11, 2016

Time: 3:00 PM

Location: 258 Hurley Hall



Lecture Title:
Poisson geometry and BV-BFV theories

Abstract

The BV-BFV formalism for field theories, developed by Cattaneo, Mnev and Reshetikhin, has been successful in unifying different classes of field theories such as gauge, topological, supersymmetric theories, and describing their quantization, as well as the presence of boundary. The purpose of this talk is to describe two applications of this formalism arising from two problems Lie theory and deformation theory, respectively: the integration of Poisson brackets and the deformation quantization problem. It turns out that the symplectic formulation of the Poisson sigma model, a special BV-BFV theory, gives a procedure to integrate arbitrary Poisson brackets, whereas its integration produces Kontsevich's star products. If time allows, we will describe natural generalization of these two problems, namely, the integration of Poisson brackets in higher genus, and the quantization of relational symplectic groupoids. This is joint work with A. Cattaneo.