Department of Mathematics
University of Notre Dame

Donald Youmans - University of Geneva

TOPOLOGY SEMINAR

Guest Speaker: Donald Youmans
University of Geneva

Date: Tuesday, January 14, 2020
Time: 2:30 PM
Location: 258 Hurley Hall

Lecture Title:

Schwarzian quantum mechanics as a Drinfeld-Sokolov reduction of BF theory

Abstract

We give an interpretation of the holographic correspondence between two-dimensional BF theory on the punctured disk with gauge group PSL(2, R) and Schwarzian quantum mechanics in terms of a Drinfeld-Sokolov reduction. The latter, in turn, is equivalent to the presence of certain edge states imposing a first class constraint on the model. The constrained path integral localizes over exceptional Virasoro coadjoint orbits. The reduced theory is governed by the Schwarzian action functional generating a Hamiltonian S^1-action on the orbits. The partition function is given by a sum over topological sectors, each of which is computed by the Duistermaat-Heckman integration formula. We recover the same results in the operator formalism.