

Pavel Safronov

Virtual fundamental classes and Batalin-Vilkovisky quantization from supersymmetric twists

Abstract

Supersymmetric localization allows one to reduce the computation of the partition function of a supersymmetric theory to a finite-dimensional integral. In this talk I will explain how virtual fundamental classes of (-2) -shifted symplectic schemes recently introduced by Borisov-Joyce, Pridham and Oh-Thomas arise from such a supersymmetric localization in the presence of extended (i.e. 0d $N=2$) supersymmetry. For instance, this gives a field-theoretic origin of the DT invariants of CY4 manifolds. Similarly, I will explain that spaces of states in the presence of extended (i.e. 1d $N=4$) supersymmetry may be computed in terms of the cohomology of a certain perverse sheaf associated to (-1) -shifted symplectic schemes. This is a report on joint work with Brian Williams.