

Ezra Getzler : Symplectic forms on derived stacks

lundi 3 juillet 2023 10:00 (1 heure)

Abstract: Chern-Weil theory gives an explicit formula for a differential form on $BGL(n)$ representing the Chern character. The lowest components of this form are of importance in geometry: the component of total degree 2 is the first Chern class, while the component of total degree 4 component is the shifted symplectic form on $BGL(n)$. This formula was first obtained in the Berkeley thesis of Shulman in 1972. The extension to the derived stack of perfect complexes (essentially the generalization to graded vector spaces of $BGL(n)$) is more difficult: an existence proof was obtained by Toën and Vezzosi, but their approach does not lead to a formula. In this talk, I show how, using an explicit realization of this derived stack (joint work with Kai Behrend) and negative cyclic homology, we obtain an explicit formula for a differential form representing the Chern character on this derived stack, and hence also an explicit formula for the shifted symplectic form.