Mathematics, Statistics, and Computer Science **@ UIC**

Algebraic K-Theory Seminar

Chern characters of perfect modules over curved algebras

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Abstract: This is a report on joint work with Mark Walker. Let k be a field of characteristic 0, and let A be a smooth, essentially finite type k-algebra. The classical Hochschild-Kostant-Rosenberg isomorphism identifies the periodic cyclic homology of A with its de Rham cohomology. Moreover, classical Chern-Weil theory provides an explicit formula for the Chern character of a projective A-module in terms of this identification. The goal of this project is to generalize this story to the setting of ''curved algebras'', i.e. graded k-algebras equipped with a specified degree 2 element. In this talk, I will recall a well-known generalization of the HKR theorem to the setting of curved algebras, and I will discuss a Chern-Weil-type formula for the Chern character of perfect modules over curved algebras satisfying an appropriate smoothness condition.

Wednesday, September 27 at 10:30 AM in SEO 1227