

## 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