

1075-18-221

**Yuri Berest\*** ([berest@math.cornell.edu](mailto:berest@math.cornell.edu)), Department of Mathematics, Cornell University, Ithaca, NY 14853-4201, and **Ajay Ramadoss** ([ajay.ramadoss@math.ethz.ch](mailto:ajay.ramadoss@math.ethz.ch)), Department Mathematik, ETH Zurich, 8092 Zurich, Switzerland. *Derived Representation Schemes and Cyclic Homology*.

The classical representation scheme  $\text{Rep}_n(A)$ , parametrizing the  $n$ -dimensional representations of an associative algebra  $A$ , defines a contravariant functor on the category of associative algebras. A natural problem is to describe the higher derived functors of  $\text{Rep}_n$  in the sense of non-abelian homological algebra. I. Ciocan-Fontanine and M. Kapranov (2001) proposed a geometric solution to this problem as part of a general program of deriving Quot schemes and other moduli spaces in algebraic geometry. In this talk, I will present a different algebraic construction of the derived functors of  $\text{Rep}_n$  arising from noncommutative geometry and discuss some interesting implications. (Received August 30, 2011)