THE RING OF DIFFERENTIAL OPERATORS ON THE FREE ALGEBRA IS A HOPF ALGEBROID

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A Hopf algebroid is a generalization of a Hopf algebra where the base ring is not necessarily commutative. One natural testing ground for such structures is provided by rings of differential operators.

In this talk, I will review my previous work on rings of differential operators over commutative rings. Next, I will move to the noncommutative setting by describing the Hopf algebroid structure on the ring of differential operators on the free algebra, which is a model case for formally smooth (quasi-free) algebras.