TAKEUCHI-SCHNEIDER EQUIVALENCE AND CALCULI FOR HOMOGENEOUS SPACES OF HOPF ALGEBROIDS

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Abstract:
We prove analogues of the Fundamental Theorem of Hopf Modules and Takeuchi equivalence for Hopf algebroids and their quantum homogeneous spaces. In the spirit of Woronowicz and Hermisson, these structure theorems enable us to construct and classify noncommutative covariant calculi on the latter. Calculi on the Ehresmann-Schauenburg Hopf algebroid, classically corresponding to the gauge groupoid, and the scalar extension Hopf algebroid are discussed in detail. The latter comprises a Hopf algebroid extension of the Heckenberger-Kolb calculi. This talk is based on joint work with Niels Kowalzig.