

Deformation quantization of Noncommutative Principal Bundles

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Drinfeld twist deformation theory of modules and algebras that carry a representation of a Hopf Algebra H can be extended to deform also morphisms and connections that are not H -equivariant. In this talk I present how similar techniques allow to canonically deform principal G -bundles, and in general how Hopf-Galois extensions are canonically deformed to new Hopf-Galois extensions. Twisting the structure group we obtain principal bundles with noncommutative fiber and where the structure group is a quantum group. Twisting the automorphism group of the principal bundle we further obtain a noncommutative base space.

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