Leibniz Universität Hannover

Oberseminar
Analysis und Theoretische Physik

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Noncommutative principal bundles via twist deformation

Principal bundles in noncommutative geometry admit a pure algebraic description in terms of algebra extensions which satisfy a certain condition (Hopf-Galois extensions). In this setting, the structure group of the fibration is replaced by a Hopf algebra. In the 90's Drinfel'd developed a theory of deformation of Hopf algebras and their modules by so-called twists. I will apply this theory to the study of noncommutative principal fibrations and show how to canonically deform Hopf-Galois extensions to new Hopf-Galois extensions. This procedure allows in particular to obtain principal bundles whose 'structure group' is a quantum group and 'base space' and 'total space' are noncommutative spaces.
Based on a joint work with P. Aschieri, P. Bieliavsky and A. Schenkel.

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Hauptgebäude der Leibniz Universität

Dazu laden herzlich ein:
Prof. Dr. Joachim Escher
Prof. Dr. Olaf Lechtenfeld
Prof. Dr. Elmar Schrohe
Prof. Dr. Christoph Walker