Announcement

Seminar on Deformation Quantization and Geometry

16. 1. 2026 at 14:00 s.t.

Seminarroom SE 31

Michael Heins (Univ. Salerno)

Universal Deformation Formula

This talk deals with a universal deformation procedure for associative algebras based on Drinfel'd Twists and Lie algebra representations by derivations. The adjective *universal* refers to the fact that the same twist may be used for the deformation of any such representation, resulting in a *universal deformation formula* induced by a fixed Drinfel'd Twist. The underlying algebraic considerations are pleasingly elegant yet elementary when phrased within their natural bialgebraic habitat. Thus, we discuss them in detail. In passing, we note how Gerstenhaber's exponentiation of commuting derivations arise from Drinfel'd twists of abelian Lie algebras. Throughout our investigations, we stick to the algebraically simplest situation of deforming an algebra, and occasionally indicate how one may go beyond. If time permits, we conclude the talk by indicating recent joint efforts with Chiara Esposito and Stefan Waldmann on establishing a framework for studying the convergence of the universal deformation formula as a power series with respect to the formal parameter.

Invited by Stefan Waldmann