Julius-Maximilians-
UNIVERSITÄT
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MUΦX
Lehrstuhl

Announcement

Seminar on Deformation Quantization and Geometry

19. 1. 2024 at 15:00 s.t.

Seminarroom SE 30

Christopher Rudolph (JMU Würzburg)

Convergent Star Products on Cotangent Bundles of Homogeneous Spaces

This talk is the sequel to my first one given in July 2023 and is about the work of my master's thesis. In their paper from April 2022, Michael Heins, Oliver Roth and Stefan Waldmann showed that the standard-ordered star product on the cotangent bundle (T^*G, ω_0) of a connected Lie group G induced by the half-commutator covariant derivative defines a continuous product on the subalgebra of entire polynomial functions endowed with a locally convex topology turning it into a Fréchet algebra. Considering the action of a closed subgroup H via right multiplication, the reduction scheme of Kowalzig, Neumaier and Pflaum yields a star product on the cotangent bundle of the quotient space G/H. On polynomial functions, this star product can be seen as a product on the quotient of H-invariant polynomial functions on G and the Poisson ideal generated by the image of a fixed basis of the Lie algebra of H under the universal momentum map via isomorphism. Now, the idea is to map a suitable quotient of the H-invariant entire polynomial functions endowed with the locally convex quotient topology injectively to this larger quotient, hopefully yielding a good subalgebra of polynomial functions on G/H together with a topology with respect to which the reduced star product becomes a continuous multiplication.

Invited by Stefan Waldmann