

Im Oberseminar

Deformationsquantisierung

spricht am **01.12.2017 um 14 Uhr c.t.**,

im Seminarraum 00.009 (Physik Ost)

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über das Thema:

Morita Equivalence and Reduction

In classical mechanics the famous theorem of Noether tells us that symmetries can be used to simplify the equations of motion of a given system. Geometrically a classical mechanical system is modeled as a symplectic manifold and simplifying the equations of motion corresponds to the so called Marsden-Weinstein reduction, or more general to coisotropic reduction.

Using deformation quantization we can quantize a classical system obtaining a $*$ -algebra describing the observables of our quantum mechanical system. But to get a complete description of the system we need to choose in addition a representation of this $*$ -algebra. Thus knowing the representation theory is an important, but in general not achievable task. Morita theory now provides tools to at least compare the representation theories of different $*$ -algebras. Taking into account reduction on the quantum side leads us to the main question of the talk: Does reduction preserve Morita equivalence?

To formulate this question precisely I will present the basics of Morita theory and of different reduction procedures, and in the end give first ideas on how this problem may be solved using a quantum analogue of coisotropic reduction.

gez. Stefan Waldmann