Deformationsquantisierung

spricht am **15. 7. 2016 um 14 Uhr c.t.,**

im Seminarraum 00.009 (Physik Ost)

Pierre Bieliavsky (UC Louvain-la-Neuve)

über das Thema:

A smooth non-commutative hyperbolic plane

I'll present a construction of a non-formal star-product algebra on the hyperbolic plane $D := SL(2, \mathbb{R})/SO(2)$. The main features are the following ones.

- Smoothness: the star-product closes on a Fréchet nuclear space S of smooth functions on D analogue to the Schwartz space in the Weyl-Moyal quantization. In particular, S densely contains the space of test functions on D, is closed under both pointwise and deformed multiplication as a Fréchet algebra. The group $SL(2, \mathbb{R})$ naturally acts in a smooth way on each of the resulting one-parameter family of algebras.

- Representability: every such deformed algebra structure equivariantly represents as compact operators on (projective) holomorphic discrete series.

- Traciality: every deformed algebra structure on S uniquely extends to the space of square-integrable function classes on D as a tracial Hilbert algebra that unitarily represents the Hilbert-Schmidt operator ideal on the corresponding holomorphic discrete series representation.

gez. Stefan Waldmann