

Im Oberseminar

## Deformationsquantisierung

spricht am **5. 5. 2017 um 14 Uhr c.t.**,

im Seminarraum 00.009 (Physik Ost)

THOMAS WEBER (UNIVERSITY OF NAPLES “FEDERICO II”)

über das Thema:

### Morita vs Drinfel'd – The Empire Twists Back

It is well-known, that Morita equivalent algebras possess equivalent categories of modules. In particular, one is able to compare their representation theories. For this, Morita equivalence is a powerful tool to control the states of a physical system. Moreover, it is an interesting theory by itself, including techniques of finitely generated projective modules. In this talk, we focus on Morita equivalence of a particular class of star product algebras. Namely those, which are related to Drinfel'd twists, i.e. Deformation Quantizations induced by symmetries. After introducing the basic notions and results, we demonstrate, that in this situation Morita equivalence already implies equivalence of star products. In particular, non-trivial Morita classes obstruct the existence of twist star products. Remark, that we have to assume a mild lifting property of the module action. Since Morita equivalence is characterized by the action of the Picard group, we obtain Chern classes of line bundles over the manifold as obstructions for twist star products. If there is time we conclude by discussing some examples.

gez. Stefan Waldmann