Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

MUΦX
Lehrstuhl X

Announcement

Seminar on Deformation Quantization and Geometry

30.10.2026 at 14:00 s.t.

Seminarroom SE 30

Matthias Schötz

Morita equivalence for *-algebras and quadratic modules

Morita equivalence allows to compare structures (e.g., the lattice of ideals) of rings: Even for non-isomorphic rings $\mathcal{R}$ and $\mathcal{S}$, it sometimes turns out that $\mathcal{R}$ and $\mathcal{S}$ are Morita equivalent, which then implies that some structures on them (in particular, their lattices of ideals) are isomorphic. The practical importance of this observation is that one can transfer results about the ideal structure of one "easy" (e.g., commutative) ring to more "complicated" (possibly non-commutative) rings. In the setting of *-rings, the structure analogous to the lattice of ideals (describing different notions of "being zero") is the lattice of quadratic modules (describing different notions of "positivity"). While Morita theory can be generalized to *-rings, the lattices of all quadratic modules unfortunately are not Morita invariant. However, the lattices of *localizable* quadratic modules are Morita invariant. Understanding the implications of this observation is work-in-progress together with Stefan Waldmann and Marvin Dippel.

Invited by Stefan Waldmann