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On positive deformations of *-algebras. (English) [Zbl 0979.53098]

Summary: Motivated by deformation quantization we consider *-algebras over ordered rings and their deformations: we investigate formal associative deformations compatible with the *-involution and discuss a cohomological description in terms of a Hermitian Hochschild cohomology. As an ordered ring allows for a meaningful definition of positive functionals and as the formal power series with coefficients in an ordered ring are again an ordered ring we define a deformation to be positive if any positive linear functional of the undeformed algebra can be deformed into a positive linear functional of the deformed algebra. We discuss various examples and prove in particular that star-products on symplectic manifolds are positive deformations.

For the entire collection see [Zbl 0949.00040].

MSC:
53D55 Deformation quantization, star products

Keywords:
ordered rings; Hermitian Hochschild cohomology; star-products on symplectic manifolds; positive deformations

Full Text: arXiv