

Waldmann, Stefan

On the representation theory of deformation quantization. (English) [Zbl 1014.53055](#)

Halbout, Gilles (ed.), Deformation quantization. Proceedings of the meeting of theoretical physicists and mathematicians, Strasbourg, France, May 31-June 2, 2001. Berlin: de Gruyter. IRMA Lect. Math. Theor. Phys. 1, 107-133 (2002).

The author gives a panorama of his results on the representation theory of star-algebras arising from deformation quantization. In the theory of star products, one deforms the classical algebra of observables, modeled by the smooth functions over a Poisson manifold M , into the direction of the Poisson bracket. In fact, one can give an intrinsic definition of states as positive linear functionals of the observable algebras. It turns out that many of the well-known quantization deformations can be recovered as GNS representation theory. Motivated by the wish to develop a representation theory for star products, the author reports here recent results on deformations of star-algebras. Moreover, he discusses the deformation of projectives modules and in particular of Hermitian vector bundles. Finally, he computes the characteristic class of Morita equivalent star products in the symplectic case.

For the entire collection see [\[Zbl 0986.00057\]](#).

Reviewer: [Angela Gammella \(Metz\)](#)

MSC:

[53D55](#) Deformation quantization, star products

Cited in **1** Document

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