

Kontsevich, Maxim

Deformation quantization of Poisson manifolds. (English) Zbl 1058.53065

Lett. Math. Phys. 66, No. 3, 157-216 (2003).

The author proves that any finite-dimensional Poisson manifold can be canonically quantized in the sense of deformation quantization. The solution presented here uses in an essential way some ideas of string theory. The author's formulas can be viewed as a perturbation series for a topological 2-dimensional quantum field theory coupled with gravity.

This important article circulated since 1997 as a frequently cited preprint (q-alg/9709040).

Reviewer: [Mircea Puta \(Timișoara\)](#)

MSC:

53D55 Deformation quantization, star products

16E40 (Co)homology of rings and associative algebras (e.g., Hochschild, cyclic, dihedral, etc.)

18G55 Nonabelian homotopical algebra (MSC2010)

53D17 Poisson manifolds; Poisson groupoids and algebroids

81S10 Geometry and quantization, symplectic methods

Cited in 38 Reviews Cited in 608 Documents

Keywords:

deformation quantization; homotopy Lie algebra

Full Text: [DOI](#) [arXiv](#)