

Waldmann, Stefan

A remark on nonequivalent star products via reduction for $\mathbb{C}\mathbb{P}^n$. (English) Zbl 0924.58119
Let. Math. Phys. 44, No. 4, 331-338 (1998).

Summary: We construct nonequivalent star products on $\mathbb{C}\mathbb{P}^n$ by phase space reduction. It turns out that the nonequivalent star products occur very natural in the context of phase space reduction by deforming the momentum map of the $U(1)$ -action on $\mathbb{C}^{n-1} \setminus \{0\}$ into a quantum momentum map and the corresponding momentum value into a quantum momentum value such that the level set, i.e., the ‘constraint surface’, of the quantum momentum map coincides with the classical one. All equivalence classes of star products on $\mathbb{C}\mathbb{P}^n$ are obtained by this construction.

MSC:

- [58H15](#) Deformations of general structures on manifolds
- [37J99](#) Dynamical aspects of finite-dimensional Hamiltonian and Lagrangian systems
- [70H33](#) Symmetries and conservation laws, reverse symmetries, invariant manifolds and their bifurcations, reduction for problems in Hamiltonian and Lagrangian mechanics

Cited in **2** Documents

Keywords:

deformation quantization; nonequivalent star products; phase space reduction

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