

Bordemann, Martin; Römer, Hartmann; Waldmann, Stefan

A remark on formal KMS states in deformation quantization. (English) Zbl 0951.53057

Let. Math. Phys. 45, No. 1, 49-61 (1998).

The authors define formal KMS states on a deformed algebra of power series of functions with compact support in phase space as $C[[\lambda]]$ -linear functionals obeying a formal variant of the usual KMS conditions known in the theory of C^* -algebras within the framework of deformation quantization. Existence and uniqueness of KMS states for any star product on a connected symplectic manifold for any inverse temperature β with respect to the time development induced by an arbitrary Hamiltonian vector field has been proven. It is shown that no KMS states for $\beta \neq 0$ exist for symplectic but non-Hamiltonian vector fields.

Reviewer: Samir Musayev (Baku)

MSC:

- [53D55](#) Deformation quantization, star products
- [37N20](#) Dynamical systems in other branches of physics (quantum mechanics, general relativity, laser physics)
- [37K05](#) Hamiltonian structures, symmetries, variational principles, conservation laws (MSC2010)

Cited in **12** Documents

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deformation quantization; KMS states

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