
98m:58043 58F06 81S10

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On quantizing T^*S^1. (English. English summary)

Rep. Math. Phys. **40** (1997), *no.* 1, 107–123.

An old Groenewold-Van Hove theorem states that it is impossible to consistently quantize even the polynomial algebra on the symplectic manifold $\mathbf{R}^{2n}$. The paper under review is part of a programme which aims to clarify the situation with other symplectic manifolds of interest. Here it is proven that the situation with T^*S^1 resembles closely that with $\mathbf{R}^{2n}$ but there are some differences as well. They are ascribed to the non-simple connectivity of the cylinder. As a by-product, the authors obtain a stronger version of the Groenewold-Van Hove "no-go" theorem for $\mathbf{R}^2$. One should notice as well the presence of the real parameter (η in the paper) in the constructed irreducible representation of the maximal quantizable Lie subalgebra which deserves special attention as its meaning is not quite clear in this context. *Ivailo M. Mladenov* (BG-AOS-BP)