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On quantizing nonnilpotent coadjoint orbits of semisimple Lie groups. (English summary)

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In this paper the author proves that if M is a non-nilpotent coadjoint orbit in the dual space $\mathfrak{b}^*$ of a finite-dimensional Lie algebra $\mathfrak{b}$ then there are no polynomial quantizations of the coordinate ring $P(M)$. This is a generalization of the author's result for $\mathfrak{sl}(2, \mathbb{R})$ [in *Geometry, mechanics, and dynamics*, 523–536, Springer, New York, 2002; [MR1919840 \(2003i:53130\)](#)].

Reviewed by *Sei-Qwon Oh*

References

1. Gotay M. J.: On quantizing semisimple basic algebras, I: $\mathfrak{sl}(2, \mathbb{R})$, In: P. Holmes, P. Newton, and A. Weinstein (eds), *Geometry, Mechanics, and Dynamics: Volume in Honor of the 60th Birthday of J. E. Marsden*, Springer, New York, 2002, pp. 523–536. [MR1919840 \(2003i:53130\)](#)
2. Gotay, M. J.: Obstructions to quantization, In: J. Nonlinear Sci. (eds), *Mechanics: From Theory to Computation (Essays in Honor of Juan-Carlos Simo)*, Springer, New York, 2000, pp. 171–216. [MR1766362](#)
3. Varadarajan, V. S.: *Lie Groups, Lie Algebras, and their Representations*, Springer, New York, 1984. [MR0746308 \(85e:22001\)](#)
4. Gotay, M. J., Grabowski, J., and Grundling, H. B.: An obstruction to quantizing compact symplectic manifolds, *Proc. Amer. Math. Soc.* **28** (2000), 237–243. [MR1622742 \(2000c:53117\)](#)
5. Dixmier, J.: *Enveloping Algebras*, North-Holland, Amsterdam, 1977. [MR0498740 \(58 #16803b\)](#)

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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