Lychagina, O. V.

Normal forms of Poisson structures. (English. Russian original) Zbl 0915.58095
Math. Notes 61, No. 2, 180-192 (1997); translation from Mat. Zametki 61, No. 2, 220-235 (1997).

In this paper is considered an application of Poisson cohomology to the problem of formal classification of degenerate Poisson structures. In the paper are also described the normal forms of degenerate Poisson structures in terms of the spectral sequence associated with a filtration on a complex, specially constructed for this purpose.

Reviewer: M.A.Efendiev (Berlin)

MSC:

37G05 Normal forms for dynamical systems

Keywords:

Poisson structures; normal form; complex; Lie-Sulyamin algebra; filtration

Full Text: DOI

References:

[1] V. I. Arnol'd, "Spectral sequences for the reduction of functions to normal forms," in:Problems in Mechanics and Mathematical Physics [in Russian], Nauka, Moscow (1976), pp. 7–20.

[2] V. V. Lychagin, "Singularities of the solutions, spectral sequences and normal forms of Lie algebras of vector fields,"Izv. Akad. Nauk SSSR Ser. Mat. [Math. USSR-Izv.],51, No. 3, 584–612 (1987). · Zbl 0643.58039

[3] A. Lichnerowicz, "Les variétés de Poisson et leurs algèbres de Lie associées,"J. Differential Geom.,12, 253–300 (1977). · Zbl 0405.53024

[4] M. V. Karasev and V. P. Maslov,Nonlinear Poisson Brackets. Geometry and Quantization [in Russian], Nauka, Moscow (1991). · Zbl 0731.58002

[5] J. L. Brylinski, "A differential complex for Poisson manifolds,"J. Differential Geom.,28, 93–114 (1988). · Zbl 0634.58029

[6] A. Weinstein, "The local structures of Poisson manifolds,"J. Differential Geom.,18, 523–557 (1983). · Zbl 0524.58011

[7] J. F. Conn, "Normal forms for smooth Poisson structures,"Ann. of Math.,121, 565–593 (1985). · Zbl 0592.58025 · doi:10.2307/1971210

[8] J. F. Conn, "Normal forms for analytic Poisson structures,"Ann. of Math.,119, 577–601 (1984). · Zbl 0553.58004 · doi:10.2307/2007086