The classification of Poisson homogeneous spaces of compact Poisson-Lie groups

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Let K be a Poisson-Lie group, $k = \text{Lie} K$. In the paper [1] V.G. Drinfeld constructed the correspondence between Poisson homogeneous K-spaces and Lagrangian subalgebras in the double $D(k)$.

Now let K be a connected compact Lie group equipped with the standard r-matrix Poisson-Lie structure. The main subject of the report is the classification of Lagrangian subalgebras in $D(k)$ with respect to the adjoint action of K. This way the classification of Poisson homogeneous K-spaces with connected stable subgroups with respect to the isomorphism is obtained.

The connected closed subgroups $H \subset K$ such that K/H is a Poisson homogeneous space with respect to certain Poisson structure are also listed. The geometric interpretation of some of Poisson homogeneous K-spaces is given.

The main results will be published in 'Doklady RAN'.

References

1. V.G. Drinfeld. On Poisson homogeneous spaces of Poisson-Lie groups. // Teor. i mat. fizika, 1993, vol.95, N.2, p.226–227