D. I. Panyushev
Independent University of Moscow
Moscow, Russia
panyush@mccme.ru

Adjoint vector fields on representation spaces: variations on a theme of Dixmier

In [1], Jacques Dixmier proved a nice theorem on "adjoint vector fields" on semisimple Lie algebras. The aim of my talk is to show that Dixmier's argument works in a more general setting and leads to some interesting problems. First, we show that a similar result holds for vector fields on the dual of certain Lie algebras that resemble semisimple ones. This class includes certain contractions of semisimple Lie algebras. Second, we apply Dixmier's approach to some modules over polynomial rings associated with representations of algebraic groups.

References

[1] J. Dixmier. Champs de vecteur adjoints sur les groupes et algébres de Lie semi-simples, *J. reine angew. Math.* **309**(1979), 183–190.