Section: 10 Functional Analysis

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On certain series of quantum bounded symmetric domains

This work is carried out with my scientific supervisor L.Vaksman and is devoted to non-commutative complex analysis in bounded symmetric domains [1] of type C_n.

For this homogeneous space of the quantum group $Sp(n, \mathbb{R})$ the following results are received:

- existence and uniqueness for faithful irreducible $*$-representation of quantum polynomial algebra is proved;

- existence and uniqueness (up to scalar) of $U_q \mathfrak{sp}_n$-invariant integral is established;

- explicit formulas for the Bergman and Cauchy-Szegö kernels are found;

- a quantum analogue of Borel embedding is obtained.

A great deal of these results hold for general quantum bounded symmetric domains (see [2]).

References

[1] L. Vaksman (ed), *Lectures on q-analogues of Cartan domains and associated Harish-Chandra modules*, arXiv:math.QA/0109198.

[2] S. Sinel'shchikov, L. Vaksman, "On q-analogues of bounded symmetric domains and Dolbeault complexes", *Mathematical Physics, Analysis and Geometry*, Kluwer Academic Publishers, **1** (1998), 75–100, q-alg 9703005.