BOSTON UNIVERSITY GEOMETRY SEMINAR

Laumon spaces and their role in representation theory

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Tea 2:45-3 in MCS 153

Abstract : Laumon spaces are compactifications of the maps from $\mathbb{CP}^1$ to the flag variety of GL_n. Considering the sum of their equivariant cohomology/K-groups one gets a representation of the yangian for $\mathfrak{sl}_n$/quantum loop algebra for $\mathfrak{sl}_n$. Moreover the bases of fixed points coincide with the Gelfand-Tsetlin bases, well known in representation theory. One can go further and define affine Laumon spaces (due to M. Finkelberg and A. Kuznetsov), which arise as compactifications of maps from $\mathbb{CP}^1$ to affine flag variety. In this case the above constructions give representations of more complicated algebras, whose theory of representations is not well understood at the present moment. I would also like to mention some open problems in this field.