

Harish-Chandra centers for affine Kac-Moody algebras in positive characteristic

This talk is based on a joint work in progress with Gurbir Dhillon. A remarkable theorem of Feigin and E. Frenkel from the early 90s describes the center of the universal enveloping algebra of an (untwisted) affine Kac-Moody Lie algebra at the so-called critical level proving a conjecture of Drinfeld: the center in question is the algebra of polynomial functions on an infinite-dimensional affine space known as the space of opers. In our work we study a part of the center in positive characteristic p at an arbitrary non-critical level. Namely, we prove that the algebra of loop-group invariants in the completed universal enveloping algebra is still the algebra of polynomials on an infinite-dimensional affine space that is “ p times smaller than the Feigin-Frenkel center”. In my talk I will introduce all necessary notions, state the result, explain motivations and examples.