

1146-20-418

Ming Fang, ZhongguangCun, Heidian District, Beijing, Peoples Rep of China, and **Zongzhu Lin*** (zlin@math.ksu.edu), Department of Mathematics, 138 Cardwell Hall, 1228 N. 17th St., Manhattan, KS 66506. *Irreducible characters for category \mathcal{O} in positive characteristics*. Preliminary report.

We extend Lusztig construction of irreducible characters for algebraic groups characteristic p to irreducible modules in the category \mathcal{O} for the hyperalgebra of the group G and conjecture similarly constructed character ${}^{\circ}E_{\lambda}^{\infty}$ are irreducible characters. These characters are infinite products of Frobenius twisted modules of finite dimensional G -modules, despite the fact that most of the irreducible modules are infinite dimensional. Haboush studied these representations in terms of central differential operators in 1980 and the irreducible representations are parametrized by p -adic integral weight lattice elements in the dual space of the p -adic Cartan Lie subalgebras. The generalization requires the setting of representations of quantum groups over p -adic fields at p^r -th root of 1. (Received January 28, 2019)