

Volodymyr Mazorchuk (Uppsala)

Category \mathcal{O} for quantum groups

Abstract: This is a report on a joint work with Henning Haahr Andersen. For quantum groups at roots of unity we establish many "usual" properties for the quantum version \mathcal{O}_q of the classical BGG-category \mathcal{O} . We describe tensor decomposition for both simple modules, projective modules, and indecomposable tilting modules. Using the known Kazhdan-Lusztig conjectures for \mathcal{O} and for finite dimensional U_q -modules we determine all irreducible characters as well as the characters of all indecomposable tilting modules in \mathcal{O}_q .