

ON THE DEMAZURE TYPE STRUCTURE OF GRADED LIMITS OF REPRESENTATIONS OF
QUANTUM AFFINE ALGEBRAS

Adriano Moura

University of Campinas, Brazil
aamoura@ime.unicamp.br

The finite-dimensional representation theory of quantum affine algebras has been subject of intense study for the past two decades motivated originally by the mathematical-physics literature. Although the irreducible representations have been classified in the early days of the development of the theory, unraveling their structure in general remains a challenging problem. Recently, the character of several important classes of irreducible modules have been computed by relating them to Demazure modules. We shall discuss recent results in this direction. In particular, we present a result showing that Demazure modules of level 2 appear as the graded limits of representations in the subcategories introduced by Hernandez-Leclerc in connection to monoidal categorification of certain cluster algebras.

Joint work with Matheus Brito (UC Riverside) and Vyjayanthi Chari (UC Riverside).