Boundary q-characters of finite-dimensional representations of quantum affine symmetric pairs

Jian-Rong Li

University of Vienna

Frenkel and Reshetikhin introduced q-characters for finite-dimensional representations of quantum affine algebras, providing a fundamental tool in their representation theory. Together with Tomasz Przezdziecki, we defined boundary q-characters for finite dimensional representations of quantum affine symmetric pairs of split types. In this talk, I will present a new joint work Tomasz Przezdziecki on evaluation modules for split quantum affine symmetric pairs. By computing the action of generators in Lu and Wang's Drinfeld-type presentation on Gelfand–Tsetlin bases, we determine the spectrum of a large commutative subalgebra arising from this presentation. This leads to an explicit formula for boundary analogues of q-characters, which we interpret combinatorially in terms of semistandard Young tableaux. Our results show that boundary q-characters share familiar features with ordinary q-characters, such as a version of the highest weight property, while also exhibiting new phenomena, including an additional symmetry.