

Rigged configuration bijection for nonexceptional affine types

Travis Scrimshaw*

tcscrim@gmail.com

Kerov, Kirillov, and Reshetikhin introduced combinatorial objects called rigged configurations to index solutions to the Bethe ansatz for Heisenberg spin chains and developed a bijection with classically irreducible components in a tensor product of finite-dimensional representations of the affine special linear Lie algebra. In this talk, we describe a generalization of the KKR bijection to all nonexceptional affine types by using Kashiwara's theory of crystal bases and virtual crystals. In doing so, we give a combinatorial proof of the $X = M$ conjecture of Hatayama et al. in all nonexceptional affine types.

This is joint work with Masato Okado and Anne Schilling.

*School of Mathematics and Physics, The University of Queensland, Brisbane, QLD 4072, AUSTRALIA