Tame representations of quantum affine algebras

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Abstract: We consider finite dimensional representations of quantum affine algebras. It is believed that if V is irreducible then images of Cartan generators form a maximal commutative subalgebra of $\mathrm{End}(V)$. In particular, if Cartan generators are diagonalizable in V, then their joint spectrum must be simple. In type A, the latter is a well-known result of M. Nazarov and V. Tarasov. We prove it in type B. In the process, we classify all modules in type B with diagonal action of Cartan currents and explicitly describe the spectrum of Cartan generators.

This talk is based on a joint work with Matheus Brito (UC Riverside, US, and Campinas, Brazil).