Super duality for quantum affine algebras of type A

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Super duality is a novel and powerful method in the representation theory of Lie superalgebras. In this talk, we introduce a new approach to finite-dimensional representations of the quantum group associated with the affine Lie superalgebra $L\mathfrak{gl}_{M|N} = \mathbb{C}[t, t^{-1}] \otimes \mathfrak{gl}_{M|N}$ $(M \neq N)$. Motivated from super duality, we explain how the representations of the quantum group of $L\mathfrak{gl}_{M|N}$ are directly related to those of the quantum group of $L\mathfrak{gl}_n$, using an exact monoidal functor called truncation.

References

[1] Jae-Hoon Kwon, Sin-Myung Lee, Super duality for quantum affine algebras of type A, Int. Math. Res. Not. IMRN (2022), no.23, pp.18446-18525

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