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*Athinization of irreducible $\widehat{\mathfrak{gl}}_n$-modules with dominant highest weights*

We study the Gelfand–Tsetlin realization of generic Verma modules for the affine Lie algebra $\widehat{\mathfrak{gl}}_n$ by viewing them as thin modules over the affine Yangian $Y(\widehat{\mathfrak{sl}}_n)$. By the results of [FFNR11], these modules admit a basis indexed by periodic Gelfand–Tsetlin patterns with explicit formulas for the Yangian action, and we identify them with the evaluation modules introduced by Kodera [K21]. Our main result describes the specialization from generic highest weights to dominant highest weights (not necessarily integral). We call the resulting construction athinization: an irreducible $\widehat{\mathfrak{gl}}_n$-module, which is not thin as a module over the affine Kac–Moody algebra, is realized as a thin module over the larger (and "more affine") algebra $Y(\widehat{\mathfrak{sl}}_n)$. Combinatorially, this realization is obtained by restricting the generic periodic Gelfand–Tsetlin basis to a distinguished subset of permitted patterns. We prove that the span of these patterns carries a well-defined affine Yangian action. In particular, this construction yields explicit Gelfand–Tsetlin-type bases for admissible representations of $\widehat{\mathfrak{gl}}_n$ in the sense of Kac–Wakimoto, providing a new combinatorial realization of these modules. We compare the formulas for characters coming from this combinatorics with those for minimal models of $W$-algebras of type $A_n$ via the principal specialization. Further, we obtain analogous results for representations of $U_q\widehat{\mathfrak{gl}}_n$ via their realization as thin modules over the quantum toroidal algebra of $\mathfrak{gl}_n$. Based on work https://arxiv.org/abs/2607.07653 joint with M. Bershtein, E. Mukhin and L. Rybnikov.