

Combinatorial bases of principal subspaces for affine lie algebra of the type $C_\ell^{(1)}$

(Talk)

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(joint work with Ivana Baranović and Mirko Primc)

Let $\tilde{\mathfrak{g}}$ be an affine Lie algebra of the type $C_\ell^{(1)}$. Let $\mathfrak{g} = \mathfrak{g}_{-1} \oplus \mathfrak{g}_0 \oplus \mathfrak{g}_1$ be a \mathbb{Z} -gradation of the corresponding simple finite-dimensional Lie algebra, and let $\tilde{\mathfrak{g}} = \tilde{\mathfrak{g}}_{-1} \oplus \tilde{\mathfrak{g}}_0 \oplus \tilde{\mathfrak{g}}_1$ be the induced \mathbb{Z} -gradation of the affine Lie algebra. A principal subspace $W(\Lambda)$ of a standard module $L(\Lambda)$ is a $\tilde{\mathfrak{g}}_1$ -submodule of $L(\Lambda)$ generated by the highest-weight vector v_Λ . We find a combinatorial basis of $W(\Lambda)$ given in terms of difference and initial conditions. Linear independence of the generating set is proved inductively by using coefficients of intertwining operators.

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