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The Generalized Weyl Poisson algebras and their Poisson simplicity criterion

Volodymyr Bavula

A new large class of Poisson algebras, the class of generalized Weyl Poisson algebras, is introduced. It can be seen as Poisson algebra analogue of generalized Weyl algebras. A Poisson simplicity criterion is given for generalized Weyl Poisson algebras and an explicit description of the Poisson centre is obtained. Many examples are considered.

References

1. V. V. Bavula, *The Generalized Weyl Poisson algebras ans their Poisson simplicity criterion*, arXiv:1902.00695.

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The specialized characters of the representation of the Lie algebra sl_3 in terms of q- and (q,p)-numbers

Leonid Bedratyuk, Ivan Kachuryk

Let Γ_λ be the standard irreducible complex representation of $\mathfrak{sl}_3$ with the highest weight $\lambda=(\lambda_1,\lambda_2)\in\mathbb{Z}^2$, $\dim\Gamma_\lambda=(\lambda_1+1)(\lambda_2+1)(\lambda_1+\lambda_2)/2$.

Denote by Λ the weight lattice of all finite dimensional representation of $\mathfrak{sl}_3$, and let $\mathbb{Z}(\Lambda)$ be their group ring. The ring $\mathbb{Z}(\Lambda)$ is free $\mathbb{Z}$-module with the basis elements $e(\lambda)$, $\lambda=(\lambda_1,\lambda_2)\in\Lambda$, $e(\lambda)e(\mu)=e(\lambda+\mu)$, $e(0)=1$. Let Λ_λ be the set of all weights of the representation Γ_λ. Then the formal character $\mathrm{Char}(\Gamma_\lambda)$ is defined as formal sum $\sum_{\mu\in\Lambda_\lambda} n_\lambda(\mu)e(\mu)\in\mathbb{Z}(\Lambda)$, here $n_\lambda(\mu)$ is the multiplicities of the weight μ in the representation Γ_λ. By replacing $e(m,n):=q^np^m$ we obtain the specialized expression for the character of $\mathrm{Char}(\Gamma_{(n,m)})\equiv[n,m]_{q,p}$.

We establish several relations between the specialized characters $[n,m]_{qp}$ and the quantum (q,p)-numbers

$$[r]_{q,p}=\frac{q^r-p^{-r}}{q-p^{-1}},$$

and in some cases between different types of q-numbers.