引言

作者给出了构造量子包络代数的Gröbner–Shirshov方法构造了几种量子包络代数和量子包络代数的Hall理论的一些基本概念和结果。要工具之一在本文中我们首先用

C₃

型量子包络代数的极小代数和相应类型的量子包络代数在

C₃

中

Gröbner–Shirshov方法证明

A = (aᵢⱼ) ∈ N × N, aᵢⱼ = 2 for i ≠ j

D = diag(d₁, ..., dₙ)

k

q

k

q

N×N

A

Fᵢ

K

Eᵢ

Fᵢ

S⁺

S⁻

Uᵢ(ν)

Eᵢ(1 ≤ i ≤ N)

Fᵢ(1 ≤ i ≤ N)

Uᵢ(ν)

Uᵦ(ν)

Uᵦ(ν)

Kᵢ

Kᵢ

Kᵢ

Kᵢ

Kᵢ

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Kᵢ

Kᵢ
设理函数域

我们有著名的遗传

代数

此集合与有限域

\[ \Lambda \]

和

\[ \text{dim} \]

\[ \Phi \]

是所有不可分解模的同构类的集合与

\[ \text{dim} \]

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其中

\( \text{Gröbner-Shirshov} \)

集合构成商代数

完备的

\( (\langle f \rangle) = 0 \mod (S; \omega) \)

\( (\langle f \rangle) \subset S \)

\( (\langle f \rangle) \subset S \cup T \cup S^- \cup U_1(A) \)

\( \xi_1 = 1 \xi_1 = 1 \xi_3 = 2 \)

\( U_0 \bigodot K^1 \bigodot K^2 \bigodot U \bigodot U^+ \)

\( U \bigodot U^0 \bigotimes U \bigotimes U^- \)

\( \eta_3 = \eta_1 - 1 \eta_2 - 1 \eta_3 = 2 \)

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\( \eta_3 = \eta_1 - 1 \eta_2 - 1 \eta_3 = 2 \)
用可分解模之间的类之间的拟交换关系得到以下公式

$$E_{1223} = \eta^{-1}(X_3), \quad E_3 = \eta^{-1}(X_3)$$

$$X = \{E, E_{12}, E_{123}, E_{1223}, E_{13}, E_{1232}, E_{23}, E_{232}, E_{32} \}$$

$$E_3 > E_{23} > E_{232} > E_2 > E_{12} > E_{13} > E_{123} > E_{1223} > E_{1232} > E_{232} > E_{23} > E_3.$$
义关系集

那么这个序诱导出由这些元素生成的单项式集上的

的类似于

例如如果

我们有以下定

Gröbner-Shirshov

因此如果

J. C. Jantzen

J. C. Jantzen

Ph. D. Thesis

University of Innsbruck

1965.

G. M. Bergman

The diamond lemma for ring theory


A. I. Shirshov

Some algorithmic problems for Lie algebras


L. A. Bokut

P. Malcolmson

Gröbner-Shirshov basis for quantum enveloping algebras


A. Obuł

G. Yunus

Gröbner-Shirshov basis of quantum group of type $E_6$


C. X. Qiang and A. Obuł

Gröbner-Shirshov basis of quantum group of type $F_4$


Y. H. Ren and A. Obuł

Gröbner-Shirshov basis of quantum group of type $G_2$


B. M. Deng

J. Du

B. Parshall

J. P. Wang

Finite Dimensional Algebra and Quantum Groups

Mathematical Surveys and Monographs Volume 150


V. G. Drinfel’d

Hopf algebras and the quantum Yang-Baxter equation


M. Jimbo

A q-difference analogue of $U(G)$ and the Yang-Baxter equation


V. Dlab

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Indecomposable Representations of Graphs and Algebras


M. Rosso

Finite dimensional representations of the quantum analogue of the enveloping algebra of a complex simple Lie algebra


C. M. Ringel

Hall polynomials for Representation-Finite Hereditary Algebras


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Hall algebras and quantum groups


C. M. Ringel

PBW-bases of quantum groups


J. C. Jantzen

Lectures on Quantum groups

Contacts on Generalized Fibonacci Sequence and Some Transformations

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Abstract

The purpose of this paper is to establish some relations between the generalized Fibonacci and the Secant, Newton-Raphson and Halley transformations. This consequence popularize some previous results.

Key words: generalized fibonacci sequence, ratio, transformation.

Gröbner–Shirshov Basis of Quantum Group of Type $C_3$

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Abstract

In this paper we prove that the set of all skew-commutator relations between the root vectors of quantized enveloping algebra of type $C_3$ is a minimal Gröbner-Shirshov basis.

Key words: Ringel-Hall algebra, indecomposable module, skew-commutator relation, Gröbner-Shirshov basis.