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Finite-dimensional simple modules over quantised Weyl algebras. (English) Zbl 0923.16005
Bull. Aust. Math. Soc. 57, No. 3, 403-408 (1998).

The quantised Weyl algebra $A_n^{\bar{q}, \Lambda}$ is an iterated skew polynomial ring in $2n$ indeterminates x_i and y_i , $1 \leq i \leq n$, involving parameters q_i , $1 \leq i \leq n$, and λ_{ij} , $1 \leq i < j \leq n$, which reduces to the usual Weyl algebra A_n when all the parameters are set equal to 1. It can be interpreted in terms of q_i -difference operators on a quantum space determined by the λ_{ij} 's and has been studied from the ring theoretical point of view by, among others, *J. Alev* and *F. Dumas* [*J. Algebra* 170, No. 1, 229-265 (1994; [Zbl 0820.17015](#))], and the reviewer [*J. Algebra* 174, No. 1, 267-281 (1995; [Zbl 0833.16025](#))]. Here, using a result on the case $n = 1$ due to the reviewer [*J. Pure Appl. Algebra* 98, No. 1, 45-55 (1995; [Zbl 0829.16017](#))], the author classifies the finite-dimensional simple $A_n^{\bar{q}, \Lambda}$ -modules when q_1 is not a root of unity and either each $\lambda_{ij} = 1$ or, for each $j \geq 2$, neither λ_{1j} nor $q_1 \lambda_{1j}$ is a root of unity or $n = 2$.

Reviewer: [D.A.Jordan \(Sheffield\)](#)

MSC:

- [16D60](#) Simple and semisimple modules, primitive rings and ideals in associative algebras Cited in 1 Document
- [16S36](#) Ordinary and skew polynomial rings and semigroup rings
- [17B37](#) Quantum groups (quantized enveloping algebras) and related deformations

Keywords:

simple modules; quantised Weyl algebras; skew polynomial rings

Full Text: [DOI](#)

References:

- [1] Jordan, *J. Pure Appl. Algebra* 98 pp 45– (1995) · [Zbl 0829.16017](#) · [doi:10.1016/0022-4049\(95\)90017-9](#)
- [2] DOI: [10.1016/S0021-8693\(05\)80036-5](#) · [Zbl 0779.16010](#) · [doi:10.1016/S0021-8693\(05\)80036-5](#)
- [3] DOI: [10.1006/jabr.1995.1128](#) · [Zbl 0833.16025](#) · [doi:10.1006/jabr.1995.1128](#)
- [4] DOI: [10.1006/jabr.1994.1336](#) · [Zbl 0820.17015](#) · [doi:10.1006/jabr.1994.1336](#)
- [5] DOI: [10.1007/BF01218386](#) · [Zbl 0651.17008](#) · [doi:10.1007/BF01218386](#)
- [6] DOI: [10.1006/jabr.1995.1276](#) · [Zbl 0846.17007](#) · [doi:10.1006/jabr.1995.1276](#)

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