Alev, J.; **Dumas, F.**

On the field of fractions of certain quantum algebras. (Sur le corps des fractions de certaines algèbres quantiques.) (French) Zbl 0820.17015

J. Algebra 170, No. 1, 229-265 (1994).

The authors show that the field of fractions of certain algebras appearing in the theory of quantum groups are isomorphic to the field of fractions of quantum n-space, when the quantum parameter q is not a root of unity. More precisely, the quantum Serre relations of type A_n and the relations defining the quantum Weyl algebra induce q- commutation relations in the field of fractions. They also study the separation of these skew fields using standard embeddings in noncommutative series. The first part of the article studies the field of fractions of $U_q^+(s\ell_n)$, the quantum analogue of the universal enveloping algebra of the Lie algebra of strictly upper triangular matrices. The second part studies the quantum Weyl algebra as differential operators arising in quantum differential calculus.

Reviewer: E.J.Taft (New Brunswick)

MSC:

17B37 Quantum groups (quantized enveloping algebras) and related deformations
16W30 Hopf algebras (associative rings and algebras) (MSC2000)

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field of fractions; quantum groups; quantum n-space; quantum Serre relations; quantum Weyl algebra; q-commutation relations

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