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Generalized Quantum Current Algebras

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Abstract: Two general families of new quantum-deformed current algebras are proposed and identified both as infinite Hopf family of algebras, a structure which enables one to define "tensor products" of these algebras. The standard quantum affine algebras turn out to be a very special case of the two algebra families, in which case the infinite Hopf family structure degenerates into a standard Hopf algebra. The relationship between the two algebraic families as well as their various special examples are discussed, and the free boson representation is also considered.

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