1012-16-140   **Joseph Bernstein** and **Vera Serganova*** (`serganov@math.berkeley.edu`), Department of
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We suggest an axiomatic definition of a quantum group as a Hopf algebra containing a torus with Chevalley-Serre generators, satisfying Kac-Moody type relations. It is possible to classify such Hopf algebras up to an isomorphism. We add certain natural non-degeneracy conditions and assume that a Hopf algebra has sufficiently large category of integrable modules. Hopf algebras satisfying the above assumptions are associated with certain symmetrizable generalized Cartan matrices, however there is more than one Hopf algebra with a given Cartan matrix.

If all integrable modules are finite-dimensional, then the algebras we study coincide with Drinfeld-Jimbo deformations of simple Lie algebras. However, for the affine matrices we obtain some new Hopf algebras.

Quantum deformation of a superalgebra is a particular case of our construction. For example, it explains the fact that the category of $osp_q(1, 2n)$-modules is equivalent to the category of $o_q(2n + 1)$-modules noticed by physicists and proved by E. Lanzmann. New affine quantum groups are also deformations of certain affine superalgebras. (Received September 19, 2005)