

## ABSTRACT FOR TAPAS TALK ON JUNE 24, 2010

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In [9], V.Toledano Laredo has introduced the notion of a trigonometric connection. The trigonometric Casimir connection is one important example of such connections, defined for the trivial vector bundle over the regular torus as base space with fiber being a representation of the Yangian  $Y_{\mathfrak{g}}$  of a simple Lie algebra  $\mathfrak{g}$ . It was conjectured in [9] that monodromy of the trigonometric connection can be computed using the quantum Weyl group operators coming from the quantum loop algebra  $U_q L\mathfrak{g}$  of the simple Lie algebra  $\mathfrak{g}$ .

Inspired by this conjecture and also by previous works of V. Chari and A. Pressley [1], [2], V. G. Drinfeld [3], [4], V. Ginzburg and E. Vasserot [7], H. Nakajima [8], which develop a bridge between quantum loop algebras and Yangians, we address the problem of constructing an algebra homomorphism between the two algebras.

In this talk I will present the joint work with V. Toledano Laredo [5], where we introduce the notion of an algebra homomorphism of geometric type from  $U_q L\mathfrak{g}$  to a completion of  $Y_{\hbar}\mathfrak{g}$  and prove the existence and uniqueness of such homomorphism. In the sequel of this work [6] the properties of the functor between corresponding representation categories are explored, which I will discuss if time permits.

### REFERENCES

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