EVGENY MUKHIN, Indiana University Purdue University Indianapolis
Duality of quantum toroidal algebras and quandum KDV flows.

We prove the $\mathfrak{gl}(n) - \mathfrak{gl}(m)$ duality of quantum integrable systems associated to quantum toroidal algebras. Conjecturally, in the case of $n = 1$ and $m = 2$, in the conformal limit, the $\mathfrak{gl}(1)$ integrals of motion become the quantum KdV flows and the $\mathfrak{gl}(2)$ integrals of motion become the corresponding non-local integrals of motion defined by Bazhanov-Lukyanov-Zamolodchikov. We discuss the corresponding Bethe ansatz.