

## Abstract

In this talk, we introduce the notions of quasi-triangular and factorizable Poisson bialgebras. A factorizable Poisson bialgebra induces a factorization of the underlying Poisson algebra. We prove that the Drinfeld classical double of a Poisson bialgebra naturally admits a factorizable Poisson bialgebra structure. Furthermore, we introduce the notion of quadratic Rota-Baxter Poisson algebras and show that a quadratic Rota-Baxter Poisson algebra of zero weight induces a triangular Poisson bialgebra. Moreover, we establish a one-to-one correspondence between factorizable Poisson bialgebras and quadratic Rota-Baxter Poisson algebras of nonzero weights. Finally, we establish the quasi-triangular and factorizable theories for differential antisymmetric infinitesimal (ASI) bialgebras, and construct quasi-triangular and factorizable Poisson bialgebras from quasi-triangular and factorizable (commutative and cocommutative) differential ASI bialgebras respectively. This is a joint work with Yuanchang Lin.