
PIERRE TARRAGO, Centro de Investigación en Matemáticas (Mexico)

Free wreath product quantum groups and free probability

A free wreath product is an algebraic construction which builds a new quantum group from a compact matrix quantum group and a non-commutative permutation group, in the same spirit as the usual wreath product. In this talk, I will present some recent results on the representation theory of certain free wreath products: I will first introduce the notion of vectorial Boolean cumulants for a compact quantum group, and then I will give an explicit basis of the intertwiner spaces of a free wreath product in terms of those vectorial Boolean cumulants.

We significantly use a connection between representation theory of non-commutative permutation groups and planar algebras, and some of our results generalize to arbitrary free products of planar algebras. This is a joint work with Jonas Wahl.