A BOUNDARY FRT CONSTRUCTION

SEBASTIAN HALBIG (UNIVERSITY OF MARBURG)

Abstract:
The reflection equation is the type B analogue of the Yang–Baxter equation and appears naturally in integrable systems and boundary scattering. Recently, the interest within the quantum algebra community in this equation has grown due to several developments including applications for quantum symmetric pairs; braided module categories and KZ-equations, and braided monoidal bicategories.
In this talk, a solution of the reflection equation is a pair of matrices R and K, with R solving the Yang–Baxter equation – the type A interchange relation of the usual braid group – and the matrix K solving the type B interchange relation of the annular braid group. The latter is called the reflection equation. The FRT construction associates to a rigid R a coquasitriangular Hopf algebra $H(R)$. In this talk, we will explore an FRT-construction that associates to K a coquasitriangular module coalgebra $C(K)$. We will show that this $C(K)$ again has surprisingly simple relations and is, in a certain sense universal amongst finitely-generated coquasitriangular module coalgebras. We will comment on semisimplifications and, if time permits, on relations between the arithmetic of RE-solutions and balanced tensor products of braided module categories. All of this is work in progress.