

1046-57-960

Michael Eisermann* (Michael.Eisermann@ujf-grenoble.fr), Institut Fourier, Université Grenoble 1, 100 rue des Maths, BP 74, 38402 St Martin d'Hères, France. *Set-theoretic Yang-Baxter operators and their deformations.*

Yang-Baxter operators have played a prominent role in knot theory and low-dimensional topology ever since the discovery of the Jones polynomial in 1984. Attempts to systematically construct and understand solutions of the Yang-Baxter equation have led to the theory of quantum groups.

In this talk we consider the special case of set-theoretic solutions and study their deformations within the space of Yang-Baxter operators over some complete ring, a problem initiated by Freyd and Yetter in 1989. We survey some past results and present recent progress in the classification of such deformations. The picture is by now reasonably complete for operators derived from conjugation in a group, or more generally from quandles or racks. We also indicate some open questions in the case of biquandles or biracks. (Received September 13, 2008)