BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

YANGIANS, QUANTUM LOOP ALGEBRAS AND ELLIPTIC QUANTUM GROUPS

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Apr 14, 2015, 4:00 – 5:00pm
Math/Computer Science, Room B21
111 Cummington Street, Boston

Tea: 3:45pm in Room MCS 144

Abstract: The Yangian $Y\mathfrak{g}$ and quantum loop algebra $U_q(L\mathfrak{g})$ of a complex semisimple Lie algebra g are infinite-dimensional quantum groups which were introduced by Drinfeld in the mid 80s, and deform the current algebra $\mathfrak{g}[s]$ and loop algebra $\mathfrak{g}[z, z^{-1}]$ of $\mathfrak{g}$. Although they share very many similarities, and were long thought to have the same representations, no precise relation between them existed until recently.

I will explain how to construct a faithful functor from the finite-dimensional representations of $Y\mathfrak{g}$ to those of $U_q(L\mathfrak{g})$ which restricts to an equivalence on an explicitly defined subcategory of $Y\mathfrak{g}$. A similar construction yields a faithful functor from representations of $U_q(L\mathfrak{g})$ to those of the elliptic quantum group corresponding to $\mathfrak{g}$.

This is joint work with Sachin Gautam.

See `http://math.bu.edu/research/geom/seminar.html` or contact Ryan Grady *regrady@math.bu.edu* for more information.