The Hecke algebra of type B and the BMW algebra of type B are centralizer algebras

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Abstract

One of the most beautiful results in mathematics is the Schur-Weyl duality between the general linear group and the symmetric group. This result brings together the representation theory of these two groups by studying their action on tensor space.

In this talk I will discuss a way to obtain tensor representations of the Hecke algebra of type B and of the BMW algebra of type B. Using these representations one can show that there is a duality between the quantum group related to the special linear algebra and the Hecke algebra of type B; and a duality between the quantum group related to the special orthogonal algebra and the type B BMW algebra. I will define all the algebras mentioned in this abstract and focus on the combinatorics of the problem.

Part of this talk is joint work with H. Wenzl.

This talk should be accessible to graduate students.