



Oberseminar

zur

Algebra und Algebraischen Kombinatorik

Prof. Dr. Stephanie van Willigenburg
(The University of British Columbia, Canada)

"Modules of the 0-Hecke algebra and quasisymmetric Schur functions"

The Schur functions classically arise in many areas including combinatorics and algebraic geometry. However, they originally arose in representation theory, for example of the symmetric group as the image of the irreducible characters under the characteristic map. In 2007 natural refinements of Schur functions, called quasisymmetric Schur functions, were discovered by Haglund, Luoto, Mason and van Willigenburg. These functions refined many combinatorial properties of Schur functions, however, an important question still remained: Is there a representation theoretic interpretation for quasisymmetric Schur functions?

In these talks we will answer this question in the affirmative. To do this we will define a 0-Hecke action on diagrams known as composition tableaux, and then use it to derive 0-Hecke modules whose image is a quasisymmetric Schur function under the quasisymmetric characteristic map. We will then relate the modules to the weak Bruhat order and use them to derive a new basis for quasisymmetric functions. We will also use them to enumerate certain diagrams known as truncated shifted reverse tableaux. Finally, by extending our techniques to skew composition tableaux, we will give restriction rules and branching rules for quasisymmetric Schur functions that are similar to those for Schur functions.

This work is joint with Vasu Tewari, and the talks assume no prior knowledge.

Montag, 14.04.2014

ab 16:00 Uhr, Raum a410

Hauptgebäude der Leibniz Universität Hannover

Zwei Vorträge mit Teepause (ca. 17:00 Uhr)

Alle Interessierten sind herzlich eingeladen.

gez. Prof. Dr. C. Bessenrodt

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