Oberseminar
zur
Algebra und Algebraischen Kombinatorik

PD Dr. Carsten Lange
(TU München)

"Realizations of generalized associahedra and related combinatorics"

Fomin and Zelevinsky associated to every cluster algebra of finite type a combinatorial sphere that turns out to be polytopal. In type A and B, these polytopes specialize to the classical associahedron (also known as Stasheff polytope) and the cyclohedron (also known as Bott-Taubes polytope). I will present simple and elegant constructions for generalized associahedra which are parametrized by the Coxeter elements of the relevant finite Coxeter group W. The common principle is to start with a permutahedron for W and 'remove' certain facet-defining inequalities determined by a Coxeter element.

In a second part of my talk, I will indicate that the realizations of generalized associahedra can be used to count certain order ideals in the weak order of a finite Coxeter group. In type A, this relates to the study of acyclic sets of linear orders. As a consequence, a conjecture of Galambos and Reiner on the maximal acyclic set visited by maximal reduced decompositions can be proven.

Montag, 06.01.2014
ab 14:15 Uhr, Raum a410
Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

gez. Prof. Dr. C. Bessenrodt

Institut für Algebra, Zahlentheorie
und Diskrete Mathematik