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Leibniz
Universität
Hannover

Oberseminar

zur

Algebra und Algebraischen Kombinatorik

Dr. Christian Stump
(FU Berlin)

"Coxeter elements in well-generated reflection groups"

The aim of this talk is to provide a conceptual reason (extending to any well-generated reflection group) why any two reflections in the symmetry group of a regular pentagon form a system of Coxeter generators.

To achieve that, I present a proof that, for a well-generated complex reflection group W with Coxeter number h , all regular elements of order h form a single W -orbit under the action of reflection automorphisms. I will then show that this construction implies for Coxeter and Shephard groups, that an element c in W is h -regular if and only if there exists a simple system S of reflections such that c is the product of the generators in S . This provides the abovementioned conceptual reason. It moreover implies that many combinatorial constructions depending on the classical definition of Coxeter elements directly extend to this more general definition. If time permits, I will also discuss why the action of reflection automorphisms preserves, and is transitive on, the set of Coxeter elements, and we study the action of the Galois group of the field of definition.

This is joint work with Vic Reiner and Vivien Ripoll.

Montag, 10.11.2014
ab 14:15 Uhr, Raum a410

Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

gez. Prof. Dr. C. Bessenrodt, Prof. Dr. M. Cuntz, Prof. Dr. U. Derenthal

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