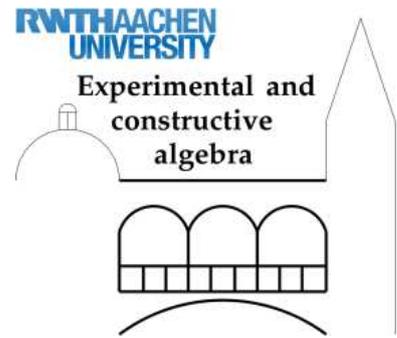


Graduiertenkolleg

# Experimentelle und konstruktive Algebra



## Kolloquiumsvortrag

Dienstag, 6. November 2012, 15:45 Uhr, Hörsaal III

**LUCIA MOROTTI: *Universal Sampling Sets over Elementary Abelian  $p$ -Groups***

Let  $G$  be a finite group. A *sampling pair* of  $G$  is a pair  $(\Omega, \Gamma)$  with  $\Omega$  a subset of the irreducible characters of  $G$  and  $\Gamma$  a subset of  $G$  satisfying that whenever  $f$  is a linear combination of the elements of  $\Omega$  and  $f$  vanishes on  $\Gamma$  then  $f = 0$ . If  $t \in \mathbb{N}$ , a subset  $\Gamma$  of  $G$  is a *universal sampling set* for  $t$  if  $(\Omega, \Gamma)$  is a sampling pair for every subset  $\Omega$  of the irreducible characters of  $G$  which satisfies  $|\Omega| \leq t$ .

In this talk I will mainly focus on one way to construct sets  $\Gamma_t$ , which are universal sampling sets for  $t$ , for groups of the form  $G = \mathbb{F}_p^r$ , where  $p$  is prime.

Using the sets constructed in the first part of the talk, I will then describe an algorithm which allows to reconstruct  $f$ , when  $f$  is a linear combination of at most  $t$  irreducible characters and we know  $f$  on  $\Gamma_{2t}$ .

Wir laden alle Interessierten herzlich ein.

Ab 15:00 Uhr gibt es Kaffee und Tee in der Bibliothek des Lehrstuhl D für Mathematik.