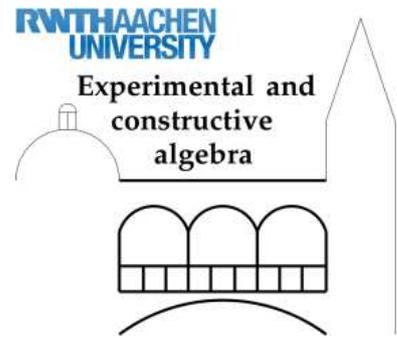Graduiertenkolleg

Experimentelle und konstruktive Algebra

Kolloquiumsvortrag

Dienstag, 25. Oktober 2016, 14:00 Uhr, SeMath

Sebastian Schönnenbeck (Lehrstuhl D für Mathematik):
S-arithmetic groups in quantum computing

The problems of exact synthesis and state preparation lie at the somewhat surprising and only recently emerged interface of quantum computing and (algorithmic) algebraic number theory. In this talk I will first give a short introduction to the field of quantum computing and then explain two of the arising practical problems in quantum compilation. In the second half of the talk we will see that these problems are (in a lot of cases) number theoretic in nature and we will study how one can tackle them using algebraic number theory in general and Bruhat-Tits buildings in particular. Moreover we will discuss a specific algorithm for the important Clifford$+T$ gate set.

Wir laden alle Interessierten herzlich ein.