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Algebra and Number Theory Seminar

Annika Guenther (Aachen)

will speak on

The automorphism group of binary self-dual type II codes

Mon 9th February 2009 at 4:00PM

Location: Mathematical Sciences Seminar Room

Self-dual binary codes are of particular interest in algebraic coding theory, and have many practical applications. The best error-correcting self-dual binary codes have the additional property of being doubly-even (or Type II), which means that the weight of every codeword, i.e. the number of its nonzero entries, is a multiple of 4. In constructing these codes, it is often helpful to consider their automorphism groups. For a binary code C of length n, its automorphism group is

$$Aut(C) := piinSym_n; |; Cpi = C,$$

where Sym_n is the symmetric group on n points. This talk presents a recent result, which says that the automorphism group of a binary self-dual Type II code of length n is always contained in the alternating group Alt_n . Moreover, given a subgroup $GleSym_n$, sufficient conditions on G will be given such that G is contained in the automorphism group of a binary self-dual Type II code.

This talk is part of the Algebra and Number Theory series. For more, see https://maths.ucd.ie/seminars