
ABSTRACTS

Fifth Combinatorics Day
University of Lethbridge
Lethbridge, Alberta
May 20, 2005

A Survey of Extremal Doubly-Even Self-Dual Codes

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Self-dual codes are widely studied because many of the best known codes are self-dual codes and they have rich algebraic properties. Binary self-dual codes are divided into two types, namely doubly-even self-dual codes and singly-even self-dual codes. A self-dual code is called *doubly-even* if all codewords have weight $\equiv 0 \pmod{4}$. The minimum weight d of a doubly-even self-dual code of length n is bounded by $d \leq 4\lfloor n/24 \rfloor + 4$. We call a doubly-even self-dual code meeting this upper bound *extremal*. It is a fundamental problem to determine the existence and to give a classification of extremal doubly-even self-dual codes.

In this talk, we will give a brief survey of extremal doubly-even self-dual codes. Next we look at Gleason's theorem which is a key result of self-dual codes and give an outline of the proof. We describe what is known for the classification and the existence of extremal doubly-even self-dual codes. Some famous problems will also be presented.

Aztec diamonds and Hankel determinants

Steve Kirkland

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Abstract available later.

Some Results on Distances in Trees

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Abstract available later.