

Additive combinatorial designs

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Abstract

A t - (v, k, λ) design is *additive* if, up to isomorphism, the point set is a subset of an abelian group G and every block is zero-sum. This definition was the starting point of an interesting theory developed in [2]. I propose to speak, more generally, of *additive combinatorial designs* generalizing the above notion in the obvious way. For instance, a decomposition of a graph K into subgraphs $\Gamma_1, \dots, \Gamma_n$ is additive if $V(K)$ is a subset of an abelian group G and $V(\Gamma_i)$ is zero-sum for $1 \leq i \leq n$. There are classic combinatorial objects which can be seen as additive combinatorial designs as, for instance, the *Heffter arrays* [3]. In this talk I will speak about the very difficult problem of constructing additive Steiner 2-designs [1] and about a joint work still in preparation with A. Pasotti on *Heffter configurations* which are additive combinatorial designs generalizing the Heffter arrays.

REFERENCES

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