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A new family of additive designs

Andrea Caggegi

*Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze,
90128 Palermo, Italy*

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Abstract

In this paper we construct a family of $2\text{-}(q^n, sp^2, \lambda)$ additive designs $\mathcal{D} = (\mathcal{P}, \mathcal{B})$, where q is a power of a prime p and \mathcal{P} is a n -dimensional vector space over $\text{GF}(q)$, and we compute their parameters explicitly. These designs, except for some special cases, had not been considered in the previous literature on additive block designs.

Keywords: Block designs, additive designs.

Math. Subj. Class. (2020): 05B05, 05B25, 05B07

E-mail address: andreacaggegibd@gmail.com (Andrea Caggegi)



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Nova družina aditivnih dizajnov

Andrea Caggegi

*Dipartimento di Ingegneria, Università degli Studi di Palermo, Viale delle Scienze,
90128 Palermo, Italy*

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Povzetek

V tem članku konstruiramo družino $2-(q^n, sp^2, \lambda)$ aditivnih dizajnov $\mathcal{D} = (\mathcal{P}, \mathcal{B})$, kjer je q potenca praštevila p in \mathcal{P} n -dimenzionalen vektorski prostor nad $GF(q)$, in natančno izračunamo njihove parametre. Ti dizajni, razen v nekaj posebnih primerih, niso bili obravnavani v dosedanji literaturi o aditivnih blok dizajnih.

Ključne besede: Blok dizajni, aditivni dizajni.

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