Non-isomorphic Affine Finites $\langle Bb, E\rangle$-nets

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Abstract. It is known that for each $n \in \mathbb{N}$ there exist affine finites $\langle Nn, E\rangle$-nets $(A_{n-1}(n,q), \|)$ with parameters $(q, q^{n-1} + q^{n-2} + \cdots + q + 1, q^{n-2})$, where q is prime power. In the paper we prove that for each $n \in \mathbb{N}$, $n > 2$ and any prime power q there exist non-isomorphic affine finites $\langle Nn, E\rangle$-nets with equal parameters $(q, q^{n-1} + q^{n-2} + \cdots + q + 1, q^{n-2})$.

References

[1] T. Beth, D. Jungnickel and H. Lenz, *Design theory*, Manheim-Wien-Zürich, 1985.

[2] A. Mandak, *The existence of $\langle Nn, E\rangle$-nets with $(n+1)$-distance*, Znanstvena revija, Maribor, 1990, 93–101.

[3] G. Čupona, J. Ušan and Z. Stojaković, *Multiquasigroups and some related structures*, Prilozi MANU, Skopje, I/1, (1980).

[4] G. Čupona, Z. Stojaković and J. Ušan, *On finite multiquasigroups*, Publ. Inst. Math., **20**(**43**) (1981), 53–59.

[5] J. Ušan, *$\langle Nn, E\rangle$-seti s $(n+1)$-rastojaniem*, Review of Research, Faculty of Sciences, University of Novi Sad, Sr. Math., **17**(**2**) (1989), 65–87.

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