

Divisible design Cayley graphs and digraphs

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In [4], Haemers, Kharaghani and Meulenberg have defined divisible design graphs as a generalization of (v, k, λ) -graphs. Divisible design digraphs, a directed graph version of divisible design graphs, were introduced in [1]. Let G be a group and S a subset of G not containing the identity element of the group, which will be denoted by e . The vertices of the Cayley digraph $Cay(G, S)$ are the elements of the group G , and its arcs are all the couples (g, gs) with $g \in G$ and $s \in S$. In this talk, we will present results on divisible design Cayley digraphs and give some constructions of such digraphs. Further, we will give some improvements on the study of divisible design Cayley graphs. The talk will be based on the studies presented in [2] and [3]. Finally, we will introduce a variation of directed Deza graphs and give connections between combinatorial structures presented in this talk.

References

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4. W. H. Haemers, H. Kharaghani, M. Meulenberg, Divisible design graphs, J. Combin. Theory Ser. A 118 (2011), 978–992.