

# On the E-optimality of complete designs under a mixed interference model

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In the experiments in which the response to a treatment can be affected by other treatments, the interference model with neighbor effects is usually used. It is known, that circular neighbor balanced designs (CNBDs) are universally optimal under such a model, if the neighbor effects are fixed as well as random ([1], [2], [3]). However, such designs cannot exist for each combination of design parameters. In [4] it is shown that in the fixed interference model circular weakly neighbor balanced designs (CWNBDs) are universally optimal over the class of designs with the same number of treatments as experimental units per block and specific number of blocks. It is known, that neither CNBD nor CWNBD can exist if the number of blocks is  $p(t-1) \pm 1$ ,  $p \in \mathbb{N}$ , with  $t$  - number of treatments. The paper [5] gave the structure of the left-neighboring matrix of E-optimal complete block designs under the model with fixed neighbor effects over the classes of designs with  $p = 1$ . The aim of this paper is to generalize E-optimality results for designs with  $p \in \mathbb{N}$  assuming random neighbor effects.

## References

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