Package 'mkssd'

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Title Efficient Multi-Level k-Circulant Supersaturated Designs

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Depends R(>= 2.13.0)

Description Generates efficient balanced non-aliased multi-level k-circulant supersaturated designs by interchanging the elements of the generator vector. Attempts to generate a supersaturated design that has chisquare efficiency more than user specified efficiency level (mef). Displays the progress of generation of an efficient multi-level k-circulant design through a progress bar. The progress of 100% means that one full round of interchange is completed. More than one full round (typically 4-5 rounds) of interchange may be required for larger designs.

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R topics documented:

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mkssd   *Efficient multi-level k-circulant supersaturated designs*

Description

mkssd is a package that generates efficient balanced non-aliased multi-level k-circulant supersaturated designs by interchanging the elements of the generator vector. The package tries to generate a supersaturated design that has chisquare efficiency more than user specified efficiency level (mef). The package also displays the progress of generation of an efficient multi-level k-circulant design through a progress bar. The progress of 100 per cent means that one full round of interchange is completed. More than one full round (typically 4-5 rounds) of interchange may be required for larger designs.

Usage

```
mkssd(m,n,q,k,mef)
```

Arguments

m	number of factors
n	number of runs
q	number of levels
k	order of circulation
mef	minimum efficiency required, should be between 0 to 1

Value

A list containing following items

m	number of factors
n	number of runs
q	number of levels
k	order of circulation
generator.vector	generator vector
design	design
efficiency	chi-square efficiency
max.chisq	maximum chi-square
time.taken	time taken to generate the design
number.aliased.pairs	number of aliased pairs

Author(s)

B N Mandal

References

B. N. Mandal, V. K. Gupta & Rajender Parsad (2014) Construction of Efficient Multi-Level k-Circulant Supersaturated Designs, Communications in Statistics - Theory and Methods, 43:3, 599-615

Examples

```
mkssd(10,6,3,2,1)
```

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