Package 'MEDesigns'

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Type Package

Title Mating Environmental Designs

Version 1.0.0

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Description In breeding experiments, mating environmental (ME) designs are very popular as mating designs are directly implemented in the field environment using block or row-column designs. Here, three functions are given related to three new methods which will generate mating diallel cross designs (Hinkelmann and Kempthorne, 1963<doi:10.2307/2333899>) or mating environmental (ME) designs along with design parameters, C matrix, eigenvalues (EVs), degree of fractionations (DF) and canonical efficiency factor (CEF). Another one function is added to check the properties of a given ME diallel cross design.

License GPL (>= 2)

Encoding UTF-8

RoxygenNote 7.3.2

NeedsCompilation no

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CheckME_Diallel *Checking the Properties of a ME-PDC*

Description

Checking the Properties of a ME-PDC

Usage

```
CheckME_Diallel(design)
```

Arguments

design	Provide a ME-PDC

Value

Generates parameters of the designs along with C matrix, eigenvalues (EVs), degree of fractionations (DF) and canonical efficiency factor (CEF).

Examples

```
library(MEDesigns)
design<-ME_PDC1(10)$ME_PDC
CheckME_Diallel(design)
```

ME_CDC *ME-CDCs for Even Number of Lines*

Description

ME-CDCs for Even Number of Lines

Usage

```
ME_CDC(lines)
```

Arguments

lines	Number of Lines >=6

Value

ME-CDCs for an even number of lines along with their parameters, C matrices, eigenvalues (EVs) and canonical efficiency factor (CEF).

Examples

```
library(MEDesigns)
ME_CDC(6)
```

ME_PDC1 *ME-PDCs for Even Number of Lines*

Description

ME-PDCs for Even Number of Lines

Usage

```
ME_PDC1(lines)
```

Arguments

lines	Number of Lines >=6

Value

ME-PDCs for an even number of lines along with their parameters, C matrices, eigenvalues (EVs), degree of fractionations (DF) and canonical efficiency factor (CEF).

Examples

```
library(MEDesigns)
ME_PDC1(6)
```

ME_PDC2 *ME PDCs for Composite Number of Lines*

Description

ME PDCs for Composite Number of Lines

Usage

```
ME_PDC2(p, q)
```

Arguments

p	Any value (p>=3)
q	Any value (q>=3)

Value

This function will provide ME-PDCs for a composite number, v(= pq) along with basic parameters, C matrix, eigenvalues (EVs), degree of fractionations (DF) and canonical efficiency factor (CEF).

Examples

```
library(MEDesigns)
ME_PDC2(3,3)
```

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