Package 'rob'

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Title Run Orders with Assignment-Expansion Method

Version 0.1.0

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Description It enables the identification of sequentialexperimentation orders for factorial designs that jointly reduce bias and the number of level changes. The method used is that presented by Conto et al. (2025), known as the Assignment-Expansion method, which consists of adapting the linear programming assignment problem to generate balanced experimentation orders. The properties identified are then generalized to designs with a larger number of factors and levels using the expansion method proposed by Correa et al. (2009) and later generalized by Bhowmik et al. (2017). For more details see Conto et al. (2025) <doi:10.1016/j.cie.2024.110844>, Correa et al. (2009) <doi:10.1080/02664760802499337> and Bhowmik et al. (2017) <doi:10.1080/03610926.2016.1152490>.

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Encoding UTF-8

RoxygenNote 7.3.2

URL https://github.com/RomarioContoL/rob

BugReports https://github.com/RomarioContoL/rob/issues

Imports FMC, minimalRSD

NeedsCompilation no

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Contents

adcol *Function to add a new column to the matrix*

Description

Function to add a new column to the matrix

Usage

```
adcol(x, y, z, run)
```

Arguments

x	levels vector of the new factor
y	number of levels of the new factor
z	level vector of the initial matrix
run	initial run matrix

Value

matrix with the new run order

Examples

```
x = matrix(c(-1, 1), ncol = 1)
y = length(x)
z = c(2,2,2)
run=matrix(c(1,-1,1,-1,1,1,-1,-1), ncol=2)
adcol(x,y,z,run)
```

runorder *Assignment-Expansion method*

Description

Assignment-Expansion method

Usage

```
runorder(z)
```

Arguments

z	vector with the levels of the factor

Value

order of experimentation with bias and number of level changes in balance

Examples

```
z<-c(2,2,2,2,2,2)
runorder(z)
z<-c(4,3,2,3,2)
runorder(z)
z<-c(3,3,2,4)
runorder(z)
```

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