Package 'TwoPhaseCorR'

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Type Package

Title Construction and Analysis of Two-Phase Experimental Designs with Correlated Errors

Version 1.0.0

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Description Tools for constructing and analyzing two-phase experimental designs under correlated error structures. Includes cyclic constructions of designs and computes information matrices for Phase I residual treatment effects, Phase II direct treatment effects, and their interaction along with the canonical efficiency factor.

License GPL-3

Encoding UTF-8

RoxygenNote 7.3.2

Imports Matrix, MASS, ggplot2

NeedsCompilation no

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Contents

`TwoPhaseDesign` *Two-Phase Experimental Design Construction and Analysis*

Description

Constructs and evaluates a two-phase experimental design using cyclic methods. Calculates information matrices and Canonical Efficiency Factor (CEF) under correlated error structures.

Usage

```
TwoPhaseDesign(v, rho, plot = TRUE)
```

Arguments

`v`	Integer (>=3). Number of treatments in Phase II.
`rho`	Numeric (-1 < rho < 1). Correlation coefficient.
`plot`	Logical. If TRUE (default), generates a CEF plot using ggplot2.

Value

A list containing the Phase I and Phase II layouts, combined layout, information matrices for treatment and interaction effects, and a table and plot of Canonical Efficiency Factors.

References

McIntyre, G. A. (1955). *Design and analysis of two-phase experiments*. Biometrics, 11(3), 324-334. <doi:10.2307/3001770>

Examples

```
result <- TwoPhaseDesign(v = 3, rho = 0.1, plot = FALSE)
print(result$cef_table)
```

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