Package 'TwoPhaseCorR'

July 29, 2025

Type Package

Title Construct Two-Phase Experimental Designs with Correlated Errors

Version 1.1.1

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Description Tools for constructing and analyzing two-phase experimental designs under correlated error structures. Version 1.1.1 includes improved efficiency factor classification with tolerance control, updated plot visualizations, and improved clarity of the results. The conceptual framework and the term two-phase were introduced by McIntyre (1955) <doi:10.2307/3001770>).

License GPL-3

Encoding UTF-8

RoxygenNote 7.3.2

Imports MASS, Matrix, dplyr, ggplot2

NeedsCompilation no

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Repository CRAN

Date/Publication 2025-07-29 10:00:08 UTC

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`TwoPhaseDesign` *Construct Two-Phase Experimental Designs with Correlated Errors*

Description

Constructs a two-phase experimental design, computes component information matrices, and evaluates the efficiency factor across intra-block correlations values.

Usage

```
TwoPhaseDesign(v, rho, plot = TRUE, n_table = 10, tol = 0.001)
```

Arguments

`v`	Integer (greater than or equal to 3). Number of treatments in Phase II.
`rho`	Intra-block correlation coefficient. A numeric value in (-1, 1).
`plot`	Logical. If TRUE, plots Efficiency Factor vs Intra-block correlation coefficient.
`n_table`	Number of efficiency values to display in the output table.
`tol`	Tolerance level for classifying Efficiency Factor as approximately equal to 1. Default is 1e-3.

Value

A list with design layouts, component information matrices, efficiency plot, summary efficiency table, and filtered efficiency table.

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 = 4, rho = 0.25, plot = FALSE)
print(result$C_mat_trt2)
print(result$eff_summary)
```

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