

# 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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**Repository** CRAN

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TwoPhaseDesign

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*Two-Phase Experimental Design Construction and Analysis*


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### 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

<code>v</code>	Integer ( $\geq 3$ ). Number of treatments in Phase II.
<code>rho</code>	Numeric ( $-1 < \rho < 1$ ). Correlation coefficient.
<code>plot</code>	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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