# Package 'HierO'

July 25, 2018

**Type** Package

**Title** A graphical user interface for calculating power and sample size
for hierarchical data

**Version** 0.2

**Date** 2015-01-13

**Author** Kari Tokola

**Maintainer** Kari Tokola <kari.tokola@gmail.com>

**Description** HierO is a graphical user interface (GUI) tool for calculating optimal statisti-
cal power and sample size for hierarchical data structure. HierO constructs a user defined sam-
ple size optimization problem to GAMS (General Algebraic Modeling Sys-
tem)form and uses Rneos package to send the problem to NEOS server for solving.

**License** GPL-2

**Depends** methods, rneos

**Imports** RCurl, bitops, XML, tcltk, tcltk2

**Suggests** XMLRPC

**Additional_repositories** http://www.omegahat.net/R

**NeedsCompilation** no

**Repository** CRAN

**Date/Publication** 2015-01-13 13:58:41

**X-CRAN-Original-Additional_repositories** http://www.omegahat.org/R

## R topics documented:

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HierO-package    *GUI for optimizing hierarchical data structure*

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### Description

HierO is a tcltk based graphical user interface (GUI) for optimizing hierarchical data structure. HierO constructs a user defined optimization problem to GAMS (General Algebraic Modeling System) form and uses Rneos package to send the problem to NEOS server for solving.

### Details

| | |
|---|---|
| Package: | HierO |
| Type: | Package |
| Version: | 0.1 |
| Date: | 2014-09-12 |
| License: | GPL-2 |
| Depends: | methods, rneos, RCurl, XMLRPC, bitops, XML, tcltk, tcltk2 |

### Author(s)

Kari Tokola

Maintainer: Kari Tokola <kari.tokola@gmail.com>

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calcPower    *Statistical power calculator*

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### Description

Calculates statistical power for given type I error (alpha), effect size (Delta) and noncentrality parameter (ncpar) of a non-central chi-square distribution

### Usage

```
calcPower(alpha = hieroEnv$res.alpha,
Delta = hieroEnv$res.Delta,ncpar = hieroEnv$res.con)
```

### Arguments

| | |
|---|---|
| alpha | Type I error |
| Delta | Effect size |
| ncpar | Effect size^2 / Noncentrality parameter of a non-central chi-square distribution |

## Value

Returns statistical power for given constants.

## Author(s)

Kari Tokola

## See Also

[delta2](delta2)

## Examples

```
   ## Not run:
calcPower(alpha=0.05, Delta=5, ncpar=3.185)

## End(Not run)
```

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delta2 *Noncentrality parameter calculator*

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## Description

Calculates noncentrality parameter of a non-central chi-square distribution for given type I error (alpha, size) and type II error (power , 1-beta).

## Usage

```
delta2(size = size, power = power)
```

## Arguments

size        type I error

power       1 - type II error (beta)

## Value

Returns noncentrality parameter value

## Author(s)

Kari Tokola

## See Also

[calcPower](calcPower)

## Examples

```
## Not run:
  delta2(0.05, 0.8)

## End(Not run)
```

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HierO                    *GUI for hierarchical data*

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## Description

HierO is a graphical user interface (GUI) tool for calculating optimal statistical power and sample size for hierarchical data structure.

## Usage

```
HierO()
```

## Details

HierO constructs a user defined sample size optimization problem to GAMS (General Algebraic Modeling System) form and uses Rneos package to send the problem to NEOS server for solving.

## Author(s)

Kari Tokola

## References

[http://onlinelibrary.wiley.com/doi/10.1111/stan.12026/abstract](http://onlinelibrary.wiley.com/doi/10.1111/stan.12026/abstract)

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hieroClass-class          *Class* "hieroClass"

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## Description

A class for HierO objects

## Objects from the Class

A virtual Class: No objects may be created from it.

## Slots

.S3Class: Object of class "character"

## Methods

No methods defined with class "hieroClass" in the signature.

## Author(s)

Kari Tokola

## Examples

```
showClass("hieroClass")
```

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| hieroEnv | *HierO environment* |
|---|---|

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## Description

Environment for HierO objects.

## Format

The format is: <environment: 0x075454d8>

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