Package 'glmm.hp'

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Type Package

Title Hierarchical Partitioning of Marginal R2 for Generalized Mixed-Effect Models

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Depends R (>= 3.4.0),MuMIn,ggplot2

Imports lme4

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Description Conducts hierarchical partitioning to calculate individual contributions of each fixed effects towards marginal R2 for generalized mixed-effect model based on output of r.squaredGLMM() in 'MuMIn', applying the algorithm of Lai J.,Zou Y., Zhang S.,Zhang X.,Mao L.(2022)glmm.hp: an R package for computing individual effect of predictors in generalized linear mixed models.Journal of Plant Ecology,15(6)1302-1307<doi:10.1093/jpe/rtac096>.

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URL https://github.com/laijiangshan/glmm.hp

RoxygenNote 7.1.1

NeedsCompilation no

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R topics documented:

`glmm.hp` *Hierarchical Partitioning of Marginal R2 for Generalized Mixed-Effect Models*

Description

Hierarchical Partitioning of Marginal R2 for Generalized Mixed-Effect Models

Usage

```
glmm.hp(mod)
```

Arguments

`mod`	Fitted lme4,nlme or glmmTMB model objects.

Details

This function conducts hierarchical partitioning to calculate the individual contributions of each predictor towards marginal R2 for Generalized Mixed-effect Model. The marginal R2 is the output of r.squaredGLMM in MuMIn package.

Value

`Total.Marginal.R2`	The marginal R2 (fixed effect) for the full model.
`Hier.part`	A matrix containing individual effects and percentage of individual effects towards total marginal R2 for each predictor.

Author(s)

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References

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- Lai J.,Zou Y., Zhang J.,Peres-Neto P.(2022) Generalizing hierarchical and variation partitioning in multiple regression and canonical analyses using the rdacca.hp R package.Methods in Ecology and Evolution,13(4):782-788<DOI:10.1111/2041-210X.13800>
- Chevan, A. & Sutherland, M. (1991). Hierarchical partitioning. American Statistician, 45, 90-96. doi:10.1080/00031305.1991.10475776
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- Nakagawa, S., & Schielzeth, H. (2013). A general and simple method for obtaining R2 from generalized linear mixed-effects models. Methods in Ecology and Evolution, 4(2), 133-142.
- Nakagawa, S., Johnson, P. C., & Schielzeth, H. (2017). The coefficient of determination R2 and intra-class correlation coefficient from generalized linear mixed-effects models revisited and expanded. Journal of the Royal Society Interface, 14(134), 20170213.

Examples

```
library(MuMIn)
library(lme4)
mod1 <- lmer(Sepal.Length ~ Petal.Length+Petal.Width +(1 | Species),data = iris)
r.squaredGLMM(mod1)
glmm.hp(mod1)
plot(glmm.hp(mod1))
```

`plot.glmmhp` *Plot for a* `glmm.hp` *object*

Description

Plot for a `glmm.hp` object

Usage

```
## S3 method for class 'glmmhp'
plot(x, plot.perc = FALSE, n = 1, ...)
```

Arguments

`x`	A `glmm.hp` object.
`plot.perc`	Logical;if TRUE, the bar plot (based on ggplot2 package) of the percentage to individual effects of variables or groups towards total explained variation, the default is FALSE to show plot with original individual effects.
`n`	Integer; which marginal R2 in output of r.squaredGLMM to plot.
`...`	unused

Value

a ggplot object

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Examples

```
library(MuMIn)
library(lme4)
mod1 <- lmer(Sepal.Length ~ Petal.Length + Petal.Width +(1 | Species), data = iris)
plot(glmm.hp(mod1))
```

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