

# Package ‘predhy.GUI’

February 21, 2023

**Type** Package

**Title** Genomic Prediction of Hybrid Performance with Graphical User Interface

**Version** 1.0

**Description** Performs genomic prediction of hybrid performance using eight GS methods including GBLUP, BayesB, RKHS, PLS, LASSO, Elastic net, Random forest and XGBoost. GBLUP: genomic best liner unbiased prediction, RKHS: reproducing kernel Hilbert space, PLS: partial least squares regression, LASSO: least absolute shrinkage and selection operator, XGBoost: extreme gradient boosting. It also provides fast cross-validation and mating design scheme for training population (Xu S et al (2016) <[doi:10.1111/tbj.13242](https://doi.org/10.1111/tbj.13242)>; Xu S (2017) <[doi:10.1534/g3.116.038059](https://doi.org/10.1534/g3.116.038059)>).

**License** GPL-3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.2.3

**Depends** R (>= 4.1.0)

**Imports** shiny, data.table, DT, predhy(>= 1.2.1), BGLR, pls, glmnet, randomForest, xgboost, foreach, doParallel, parallel, htmltools

**NeedsCompilation** no

**Repository** CRAN

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hybrid_phe	<i>Phenotypic data of hybrids</i>
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**Description**

This dataset contains phenotypic data of 410 hybrids for grain yield in maize.

**Usage**

hybrid\_phe

**Format**

A data frame with 410 rows and 3 variables:

M The names of male parents.

F The names of female parents.

GY The grain yield of hybrids.

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input_geno	<i>Genotype in Hapmap Format</i>
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**Description**

Genotypic data of 348 maize inbred lines in Hapmap format with double bit.

**Usage**

input\_geno

**Format**

A data frame with 4979 rows and 359 columns.

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input_geno1	<i>Genotype in Numeric Format</i>
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**Description**

Genotypic data of 50 rice inbred lines with 1000 SNPs.

**Usage**

```
input_geno1
```

**Format**

A data frame with 1000 rows and 50 variables.

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predhy.GUI	<i>Graphical User Interface for R package predhy</i>
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**Description**

Graphical User Interface for cross validation, genotype conversion and hybrid performance prediction.

**Usage**

```
predhy.GUI()
```

**Value**

No return value, called for Graphical User Interface

**Examples**

```
{  
predhy.GUI() }
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