Package 'errint'

January 18, 2016

Type Package

Title Build Error Intervals

Version 0.1

Date 2016-01-15

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Description Build and analyze error intervals for a particular model predictions assuming different distributions for noise in the data.

Depends VGAM, rootSolve

License GPL-2

LazyData TRUE

BuildVignettes TRUE

RoxygenNote 5.0.1

URL http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

NeedsCompilation no

Repository CRAN

Date/Publication 2016-01-18 22:25:08

R topics documented:

`acc_intervals` *Accuracy of Error intervals*

Description

`int_intervals` computes the real accuracy of a given error intervals for a particular set of errors and a particular error function.

Usage

```
acc_intervals(interv, errors, f = function(x, y) {     abs(x - y) },
  tol = 10^-8)
```

Arguments

`interv`	error interval.
`errors`	set of errors.
`f`	error function to be used to compute error between real `x` (`interv`) and predicted `y` (`errors`) values. See also 'Details'.
`tol`	used to normalize residual values to (0,1) when beta is the assumed distribution. See also 'Details'.

Details

`f` must be a function that takes two arguments, `x` and `y`, and return a numeric value.

The formula used to normalize residual values to (0,1) when a Beta distribution is assumed is $\frac{|\phi|}{max|\phi|+tol}$.

Value

Returns an object of class `c("measure","list")` with information of the interval accuracy.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

measure error_interval

Examples

```
interv<-int_gau(rnorm(1000),0.1)
acc_intervals(interv,rnorm(1000))
acc_intervals(interv,rnorm(1000),function(x,y){x-y})
```

`best_distribution` *Distribution with Best Error Intervals*

Description

`best_distribution` computes the distribution assumption that gives error intervals with the lower accuracy error for a given set of residuals.

Usage

```
best_distribution(phi, errors, dists = c("n", "nm", "l", "lm", "w", "b"), ...)
```

Arguments

`phi`	residual values used to compute the error interval.
`errors`	set of real errors corresponding to the predictions of a particular model.
`dists`	character vector with the distribution assumptions to test. See also 'Details'.
`...`	additional arguments to be passed to functions `error_interval` and `acc_intervals`.

Details

Allowed distribution assumptions are:

- "n": Zero-mu Gaussian
- "nm": General Gaussian
- "l": Zero-mu Laplace
- "lm": General Laplace
- "b": Beta
- "w": Weibull

Value

Returns an object of class `c("df_intervals", "data.frame")` with information of the distribution assumption with lower accuracy error.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

df_intervals error_interval acc_intervals

Examples

```
best_distribution(rnorm(10000),rnorm(10000),dists=c("n","b"))
best_distribution(rnorm(10000),rnorm(10000))
```

`df_intervals` *Data Frames of Intervals*

Description

`df_intervals` creates an object of class `c("df_intervals", "data.frame")`.

`as.df_intervals` attempts to coerce its argument `x` into an object of class `c("df_intervals", class(x))`. If this is not possible `x` is returned unchanged.

`is.df_intervals` returns TRUE if x is an R object with `"df_intervals"` as one of its classes. It returns FALSE otherwise.

Usage

```
df_intervals(distributions, errs)

as.df_intervals(x)

is.df_intervals(x)
```

Arguments

distributions	vector containing the names of the distribution correspondind to each error.
errs	vector of errors associated to intervals built under a particular distribution assumption indicated by 'distributions'.
x	an R object.

Value

df_intervals returns an object of class c("df_intervals", "data.frame") with information regarding the error of intervals built under different distribution assumptions.

as.df_intervals returns an object of class c("df_intervals",class(x)) with information contained in x if possible. Returns x otherwise.

is.df_intervals returns TRUE if x is an R object with "df_intervals" as one of its classes. FALSE otherwise.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

Examples

```
df_intervals("l",0.1)

df_intervals(c("l","lm","n","nm","b","w"),rep(0.1,6))


df<-data.frame(distribution=rnorm(1000),error=rnorm(1000))
as.df_intervals(df)

v<-c("a","b")
as.df_intervals(v)


df<-data.frame(distribution=rnorm(1000),error=rnorm(1000))
is.df_intervals(df)
res<-as.df_intervals(df)
is.df_intervals(res)
```

`df_intervals.default` *Data Frames of Intervals*

Description

`df_intervals` creates an object of class `c("df_intervals", "data.frame")`.

Usage

```
## Default S3 method:
df_intervals(distributions, errs)
```

Arguments

`distributions`	vector containing the names of the distribution correspondind to each error.
`errs`	vector of errors associated to intervals built under a particular distribution assumption indicated by 'distributions'.

Value

Returns an object of class `c("df_intervals", "data.frame")` with information regarding the error of intervals built under different distribution assumptions.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

Examples

```
df_intervals("l",0.1)

df_intervals(c("l","lm","n","nm","b","w"),rep(0.1,6))
```

`error_interval` *Error Intervals*

Description

`error_interval` creates an object of class `c("error_interval", "list")`.

`as.error_interval` attempts to coerce its argument `x` into an object of class `c("error_interval", class(x))`. If this is not possible `x` is returned unchanged.

`is.error_interval` returns TRUE if x is an R object with `"error_interval"` as one of its classes. It returns FALSE otherwise.

Usage

```
error_interval(phi, s = 0.05, dist = "n", tol = 10^-6, ...)

as.error_interval(x)

is.error_interval(x)
```

Arguments

`phi`	a vector with residual values used to compute the error interval.
`s`	confidence level, e,g. s=0.05 for the standard 95 percent confidence interval.
`dist`	assumed distribution for the noise in the data.
`tol`	used to normalize residual values to (0,1) when beta is the assumed distribution. The formula used is abs(phi)/(max(abs(phi))+tol).
`...`	additional arguments to be passed to the low level error_interval building functions (see below).
`x`	an R object.

Value

`error_interval` returns an object of class `c("error_interval","list")` with information regarding the error intervals built.

`as.error_interval` returns an object of class `c("error_interval",class(x))` with information contained in x if possible. Returns x otherwise.

`is.error_interval`returns TRUE if x is an R object with `"error_interval"` as one of its classes. FALSE otherwise.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

Examples

```
error_interval(rnorm(100))

error_interval(rnorm(100),s=0.1,dist="lm")


l<-list(min=-1,max=1,err=0.05,s=0.1,dist="n",phi=rnorm(1000))
as.error_interval(l)

v<-c("a","b")
as.error_interval(v)


l<-list(min=-1,max=1,err=0.05,s=0.1,dist="n",phi=rnorm(1000))
is.error_interval(l)
res<-as.error_interval(l)
is.error_interval(res)
```

---

error_interval.default

Error Intervals

Description

`error_interval.default` creates an object of class `c("error_interval", "list")`.

Usage

```
## Default S3 method:
error_interval(phi, s = 0.05, dist = "n", tol = 10^-6,
  ...)
```

Arguments

`phi`	a vector with residual values used to compute the error interval.
`s`	confidence level, e,g. s=0.05 for the standard 95 percent confidence interval.
`dist`	assumed distribution for the noise in the data.

tol	used to normalize residual values to (0,1) when beta is the assumed distribution. The formula used is abs(phi)/(max(abs(phi))+tol).
...	additional arguments to be passed to the low level error_interval building functions (see below).

Value

Returns an object of class c("error_interval","list") with information regarding the error intervals built.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

Examples

```
error_interval(rnorm(100))

error_interval(rnorm(100),s=0.1,dist="lm")
```

---

int_lap *Building Error Intervals*

Description

int_lap computes the error interval of a set of residuals assuming a Laplace distribution with zero location for the noise.

int_gau computes the error interval of a set of residuals assuming a Gaussian distribution with zero mean for the noise.

int_lap_mu computes the error interval of a set of residuals assuming a Laplace distribution.

int_gau_mu computes the error interval of a set of residuals assuming a Gaussian distribution.

int_beta computes the error interval of a set of residuals assuming a Beta distribution.

int_weibull computes the error interval of a set of residuals assuming a Weibull distribution.

See also 'Details'.

Usage

```
int_lap(phi, s)

int_gau(phi, s, ps = 0, threshold = 10^-2, upper = 10^6)

int_lap_mu(phi, s, ps = median(phi, na.rm = T), threshold = 10^-2,
  upper = 10^6)

int_gau_mu(phi, s, ps = mean(phi, na.rm = T), threshold = 10^-2,
  upper = 10^6)

int_beta(phi, s, ps = 10^-4, threshold = 10^-4, upper = 1,
  m1 = mean(phi, na.rm = T), m2 = mean(phi^2, na.rm = T), alpha_0 = (m1 *
  (m1 - m2))/(m2 - m1^2), beta_0 = (alpha_0 * (1 - m1)/m1))

int_weibull(phi, s, ps = 10^-4, threshold = 10^-2, upper = 10^6,
  k_0 = 1)
```

Arguments

phi	residual values used to compute the error interval.
s	confidence level, e,g. s=0.05 for the standard 95 percent confidence interval.
ps	minimum value to search for solution of the integral equation to solve. See also 'Details'.
threshold	step size to increase ps after each iterarion. See also 'Details'.
upper	maximum value to search for solution of the integral equation to solve. See also 'Details'.
m1	first moment of the residuals. Used to compute alpha_0.
m2	second moment of the residuals. Used to compute beta_0.
alpha_0	initial value for Newton-Raphson method for the parameter α. See also 'Details' and multiroot.
beta_0	initial value for Newton-Raphson method for the parameter β. See also 'Details' and multiroot.
k_0	initial value for Newton-Raphson method for the parameter κ. See also 'Details' and multiroot.

Details

For the Zero-μ Laplace distribution the value of the corresponding integral equation has a closed solution of the form $ps = -\sigma \log 2s$.

For the other distributions, starting with the initial value of ps passed as argument, the value, integral, of the corresponding integral expression is computed (see also 'References' for an in-depth explanation of this integral expression). If integral is smaller than 1-s then ps is increased by a step size of threshold value and integral is recomputed. If integral is greater or equal than 0 or if ps gets bigger than upper, the loop stops and the last value of ps will be its final value.

In addition, for the Beta distribution values of parameters α and β are estimated using Newton-Raphson method, and for the Weibull distribution value of parameter κ is estimated using Newton-Raphson method and then estimated value of λ is computed using a closed form that depends on κ.

See also 'References'.

Value

Returns an object of class `c("error_interval","list")` with information of the corresponding error interval.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

error_interval

p_laplace

p_gaussian

p_beta

p_weibull

multiroot

Examples

```
int_lap(rnorm(100),0.1)
int_lap(rbeta(100,0.1,0.2),0.6)


int_gau(rnorm(100),0.1)
int_gau(rnorm(100),0.1,0.1,10^-3,10^2)


int_lap_mu(rnorm(100),0.1)
int_lap_mu(rnorm(100),0.1,0.1,10^-3,10^2)


int_gau_mu(rnorm(100),0.1)
```

```
int_gau_mu(rnorm(100),0.1,0.1,10^-3,10^2)


int_beta(runif(100,0,0.99),0.1)
int_beta(runif(100,0,0.99),0.1,alpha_0=1,beta_0=1)


int_weibull(abs(rnorm(100)),0.1)
int_weibull(abs(rnorm(100)),0.1,k_0=2)
```

`measure` *Measures*

Description

`measure` creates an object of class `c("measure", "list")`.

`as.measure` attempts to coerce its argument `x` into an object of class `c("measure", class(x))`. If this is not possible `x` is returned unchanged.

`is.measure` returns TRUE if x is an R object with `"measure"` as one of its classes. It returns FALSE otherwise.

Usage

```
measure(s, acc, f = function(x, y) {     abs(x - y) })

as.measure(x)

is.measure(x)
```

Arguments

`s`	confidence level, e,g. s=0.05 for the standard 95 percent confidence interval.
`acc`	accuracy achieved by error intervals.
`f`	function used to compute error of intervals. See also 'Details'.
`x`	an R object.

Value

`measure` returns an object of class `c("measure","list")` with information regarding the error of a set of intervals.

`as.measure` returns an object of class `c("measure",class(x))` with information contained in x if possible. Returns x otherwise.

`is.measure` returns TRUE if x is an R object with `"measure"` as one of its classes. FALSE otherwise.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

Examples

```
measure(0.1,0.7)

measure(0.1,0.7,function(x,y){y-x})


l<-list(s=0.1,acc=0.78,f=function(x,y){abs(x-y)},err=0.02)
as.measure(l)

v<-c("a","b")
as.measure(v)


l<-list(s=0.1,acc=0.78,f=function(x,y){abs(x-y)},err=0.02)
is.measure(l)
res<-as.measure(l)
is.measure(res)
```

---

measure.default *Measure*

Description

measure creates an object of class c("measure", "list").

Usage

```
## Default S3 method:
measure(s, acc, f = function(x, y) {     abs(x - y) })
```

Arguments

s	confidence level, e,g. s=0.05 for the standard 95 percent confidence interval.
acc	accuracy achieved by error intervals.
f	function used to compute error of intervals. See also 'Details'.

Value

Returns an object of class `c("measure","list")` with information regarding the error of a set of intervals.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

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Examples

```
measure(0.1,0.7)

measure(0.1,0.7,function(x,y){y-x})
```

---

print.df_intervals *Printing Data Frames of Intervals*

Description

`print` objects of class `df_interval`.

Usage

```
## S3 method for class 'df_intervals'
print(x, ...)
```

Arguments

`x`	object of class `df_interval` to be printed.
`...`	optional arguments.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

df_intervals

Examples

```
res<-df_intervals(c("l","lm","n","nm","b","w"),rep(0.1,6))
print(res)
```

`print.error_interval` *Printing Error Intervals*

Description

`print` objects of class `error_interval`.

Usage

```
## S3 method for class 'error_interval'
print(x, ...)
```

Arguments

`x`	object of class `error_interval` to be printed.
`...`	optional arguments.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

error_interval

Examples

```
res<-error_interval(rnorm(100))
print(res)
```

`print.measure` *Printing Measures*

Description

`print` objects of class `measure`.

Usage

```
## S3 method for class 'measure'
print(x, ...)
```

Arguments

`x`	object of class `measure` to be printed.
`...`	optional arguments.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

measure

Examples

```
res<-measure(0.1,0.7)
print(res)
```

print.summary.error_interval
Printing Error Intervals Summaries

Description

print objects of class summary.error_interval.

Usage

```
## S3 method for class 'summary.error_interval'
print(x, ...)
```

Arguments

x	object of class summary.error_interval to be printed.
...	optional arguments.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

summary error_interval

Examples

```
res<-error_interval(rnorm(100))
summary(res)
```

`print.summary.measure` *Printing Measures Summaries*

Description

`print` objects of class `summary.measure`.

Usage

```
## S3 method for class 'summary.measure'
print(x, ...)
```

Arguments

`x`	object of class `summary.measure` to be printed.
`...`	optional arguments.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

summary measure

Examples

```
res<-measure(0.1,0.7)
summary(res)
```

p_laplace *Probability Density Functions*

Description

p_laplace computes the probability density function of a random variable that has a Laplace distribution with parameters μ and σ.

p_gaussian computes the probability density function of a random variable that has a Gaussian distribution with parameters μ and σ^2.

p_beta computes the probability density function of a random variable that has a Beta distribution with parameters α and β.

p_weibull computes the probability density function of a random variable that has a Weibull distribution with parameters κ and λ.

Usage

```
p_laplace(x, mu = 0, sigma = 1)

p_gaussian(x, mu = 0, sigma_cuad = 1)

p_beta(x, alpha = 1, beta = 1)

p_weibull(x, k = 1, lambda = 1)
```

Arguments

x	vector of points which values we want to compute.
mu	location or mean parameter of the Laplace or Gaussian distribution, respectively.
sigma	scale parameter of the Laplace distribution.
sigma_cuad	variance parameter of the Gaussian distribution.
alpha	shape1 parameter of the Beta distribution.
beta	shape2 parameter of the Beta distribution.
k	shape parameter of the Weibull distribution.
lambda	scale parameter of the Weibull distribution.

Value

Returns a numeric object corresponding to the value of the probability density function for the given x and distribution parameters.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

dlaplace

dnorm

dbeta

dweibull

Examples

```
p_laplace(0.3)
p_laplace(0.3,mu=0.35,sigma=0.2)


p_gaussian(0.3)
p_gaussian(0.3,mu=0.35,sigma_cuad=0.2)


p_beta(0.3)
p_beta(0.3,alpha=0.35,beta=0.2)


p_weibull(0.3)
p_weibull(0.3,k=0.35,lambda=0.2)
```

---

sort_distributions *Sort Distributions by Better Error Intervals*

Description

`sort_distributions` orders a given set of distribution assumptions in order of intervals accuracy error in ascending or descending order.

Usage

```
sort_distributions(phi, errors, dists = c("n", "nm", "l", "lm", "w", "b"),
  decreasing = FALSE, ...)
```

Arguments

phi	residual values used to compute the error interval.
errors	set of real errors corresponding to the predictions of a particular model.
dists	character vector with the distribution assumptions to test. See also 'Details'.
decreasing	logical, indicating whether or not distributions should be ordered by decreasing accuracy error.
...	additional arguments to be passed to functions error_interval and acc_intervals.

Details

Allowed distribution assumptions are:

- "n": Zero-mu Gaussian
- "nm": General Gaussian
- "l": Zero-mu Laplace
- "lm": General Laplace
- "b": Beta
- "w": Weibull

Value

Returns an object of class c("df_intervals", "data.frame") with information of the distribution assumptions ordered by accuracy error.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

df_intervals error_interval acc_intervals order

Examples

```
sort_distributions(rnorm(10000),rnorm(10000),dists=c("n","b"))
sort_distributions(rnorm(10000),rnorm(10000),decreasing=TRUE)
```

summary.error_interval *Error Intervals Summaries*

Description

summary produces summaries for objects of class error_interval.

Usage

```
## S3 method for class 'error_interval'
summary(object, ...)
```

Arguments

object	object of class error_interval to be printed.
...	optional arguments.

Value

Object of class c("summary.error_interval","list") corresponding to the summary of x.

Author(s)

Jesus Prada, <jesus.prada@estudiante.uam.es>

References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

error_interval

Examples

```
res<-error_interval(rnorm(100))
summary(res)
```

summary.measure *Measures Summaries*

Description

summary produces summaries for objects of class measure.

Usage

```
## S3 method for class 'measure'
summary(object, ...)
```

Arguments

object	object of class measure to be printed.
...	optional arguments.

Value

Object of class c("summary.measure","list") corresponding to the summary of x.

Author(s)

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References

Link to the scientific paper

Prada, Jesus, and Jose Ramon Dorronsoro. "SVRs and Uncertainty Estimates in Wind Energy Prediction." Advances in Computational Intelligence. Springer International Publishing, 2015. 564-577,

with theoretical background for this package is provided below.

http://link.springer.com/chapter/10.1007/978-3-319-19222-2_47

See Also

measure

Examples

```
res<-measure(0.1,0.7)
summary(res)
```

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