

Package ‘kriging’

February 20, 2015

Version 1.1

License GPL-2

Description Simple and highly optimized ordinary kriging algorithm to plot geographical data

Title Ordinary Kriging

Author Omar E. Olmedo

Maintainer Omar E. Olmedo <omareolmedo@gmail.com>

Suggests maps

NeedsCompilation yes

Repository CRAN

Date/Publication 2014-12-01 17:55:32

R topics documented:

image.kriging	1
kriging	2
plot.kriging	3

Index	5
--------------	----------

image.kriging	<i>Map kriged data</i>
---------------	------------------------

Description

Create maps using the coordinates and predicted values in objects of class kriging.

Usage

```
## S3 method for class 'kriging'  
image(x, main = NULL, xlab = "", ylab = "", col = heat.colors(100), ...)
```

Arguments

x	object of class kriging.
main	See par.
xlab	See par.
ylab	See par.
col	See par.
...	arguments, passed to image.default.

Author(s)

Omar E. Olmedo

See Also

[kriging.](#)

kriging

Ordinary Kriging

Description

Simple and highly optimized ordinary kriging algorithm to plot geographical data

Usage

```
kriging(x, y, response, model = "spherical", lags = 10, pixels = 100, polygons = NULL)
```

Arguments

x	vector of x-axis spatial points.
y	vector of y-axis spatial points.
response	vector of observed values.
model	specification of the variogram model. Choices are "spherical", "exponential" or "gaussian". Defaults to "spherical".
lags	number of lags. Defaults to 10.
pixels	maximum number of points along either axis. Defaults to 100.
polygons	list of polygons used to grid predicted values on to. The default value of NULL automatically generates an evenly spaced out rectangular grid of points spanning the range of the data.

Details

The kriging algorithm assumes a minimum number of observations in order to fit the variogram model.

Value

An object of class kriging that inherits from list and is composed of:

model	character; variogram model.
nugget	numeric; value of nugget parameter.
range	numeric; value of range parameter.
sill	numeric; value of sill parameter.
map	data.frame; contains the predicted values along with the coordinate covariates.
semivariogram	data.frame; contains the distance and semivariance values.

Author(s)

Omar E. Olmedo

See Also

[image.kriging](#), [plot.kriging](#).

Examples

```
# Krige random data for a specified area using a list of polygons
library(maps)
usa <- map("usa", "main", plot = FALSE)
p <- list(data.frame(usa$x, usa$y))

# Create some random data
x <- runif(50, min(p[[1]][,1]), max(p[[1]][,1]))
y <- runif(50, min(p[[1]][,2]), max(p[[1]][,2]))
z <- rnorm(50)

# Krige and create the map
kriged <- kriging(x, y, z, polygons=p, pixels=300)
image(kriged, xlim = extendrange(x), ylim = extendrange(y))
```

plot.kriging

Plot Semivariogram

Description

Plots distance versus semivariance with a fitted curve indicating the model used.

Usage

```
## S3 method for class 'kriging'
plot(x, main = "Semivariogram", xlab = "Distance", ylab = "Semivariance", ...)
```

Arguments

<code>x</code>	object of class <code>kriging</code> .
<code>main</code>	See par .
<code>xlab</code>	See par .
<code>ylab</code>	See par .
<code>...</code>	arguments, passed to <code>plot.default</code> .

Author(s)

Omar E. Olmedo

See Also

[kriging](#).

Index

*Topic **datagen**

kriging, 2

*Topic **dplot**

image.kriging, 1

plot.kriging, 3

*Topic **hplot**

image.kriging, 1

plot.kriging, 3

*Topic **models**

kriging, 2

image.kriging, 1, 3

kriging, 2, 2, 4

par, 2, 4

plot.kriging, 3, 3