Package 'FlexScan'

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Type Package

Title Flexible Scan Statistics

Version 0.2.2

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Depends R (>= 2.10)

Description An easy way to conduct flexible scan.
Monte-Carlo method is used to test the spatial clusters given the cases, population, and shapefile.
A table with formal style and a map with clusters are included in the result report.
The method can be referenced at: Toshiro Tango and Kunihiko Takahashi (2005) <doi:10.1186/1476-072X-4-11>.

License GPL-3

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Contents

`flexscan` *Flexible Scan Statistics*

Description

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Usage

```
flexscan(map,case,pop,nsim,k,alpha,isplot,col)
```

Arguments

`map`	spatial object, typically a shapefile read in using 'rgdal::readOGR'
`case`	numeric, a vector of number of cases for each region of 'map'; it is noteworthy that the order of regions in 'case' is corresponding to that in 'map'
`pop`	numeric, a vector of number of population for each region of 'map'; it is noteworthy that the order of regions in 'pop' is corresponding to that in 'map'
`nsim`	numeric, the number of simulations for Monte Carlo test; the default is 999
`k`	numeric, the maximum number of regions allowed for clusters; the default is 10
`alpha`	numeric, the significance level of flexible scan test; the default is 0.05
`isplot`	logical, wether to plot the results; the default is 0.05
`col`	color vector, two colors for most likely cluster and secondary cluster; the default is c("red","blue")

Value

`data.frame`	a data.frame containing 8 variables as follows:
`Cluster Type`	most likely cluster or secondary cluster
`Region ID`	region id for each cluster; it is noteworthy that the 'ID' is the order of regions in 'map'
`Observed Cases`	observed cases for each cluster
`Expected Cases`	expected cases for each cluster
`SR`	standardized ratio of observed to expected cases
`RR`	relative risk for each cluster
`LLR`	loglikelihood ratio for each cluster
`P Value`	p value of likelihood ratio test for each cluster

Note

Please feel free to contact us, if you have any advice and find any bug!

Reference:

Tango, T. & Takahashi, K. A Flexibly Shaped Spatial Scan Statistic for Detecting Clusters. INT J HEALTH GEOGR. 4, 11 (2005).

Updates:

Version 0.2.0: Fix the bugs according to the dependent package of "smerc" version 1.1

Version 0.2.2: Fix the bugs according to the dependent package of "spdep"

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Examples

```
  data(map)
  data(sample)
  # simple example for checks; turn the warnings back on using 'options(warn=0)'
  options(warn=-1)
  flexscan(map,case=sample$case,pop=sample$pop,k=3,isplot=FALSE,nsim=10)
## Not run:
 flexscan(map,case=sample$case,pop=sample$pop)

## End(Not run)
```

---

map *Shapefile*

Description

There 123 tiles in the map.

Usage

```
map
```

---

sample *Sample Data*

Description

There are two variables in the 'sample' including 'case' and 'pop'.

Usage

```
sample
```

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