Package: localsp (via r-universe)

January 28, 2025

Title Local Indicator of Stratified Power

Version 0.2.0

Description Implements a local indicator of stratified power to analyze local spatial stratified association and demonstrate how spatial stratified association changes spatially and in local regions, as outlined in Hu et al. (2024) <doi:10.1080/13658816.2024.2437811>.

License GPL-3

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

URL https://ausgis.github.io/localsp/, https://github.com/ausgis/localsp

BugReports https://github.com/ausgis/localsp/issues

Depends R (>= 4.1.0)

Imports dplyr, gdverse, purrr, sdsfun, sf, tibble, tidyr

Suggests automap, gstat, knitr, readr, rmarkdown

VignetteBuilder knitr

Config/pak/sysreqs libfontconfig1-dev libfreetype6-dev libgdal-dev gdal-bin libgeos-dev make libicu-dev libpng-dev libssl-dev libproj-dev python3 libsqlite3-dev libudunits2-dev

Repository https://ausgis.r-universe.dev

RemoteUrl https://github.com/ausgis/localsp

RemoteRef HEAD

RemoteSha 14789bf307aa285092a215803f24808d3add63e5

Contents

`lisp` *local indicator of stratified power*

Description

local indicator of stratified power

Usage

```
lisp(
  formula,
  data,
  threshold,
  distmat,
  discvar = NULL,
  discnum = 3:8,
  discmethod = c("sd", "equal", "geometric", "quantile", "natural"),
  cores = 1,
  ...
)
```

Arguments

`formula`	A formula.
`data`	The observation data.
`threshold`	The distance threshold employed to select "local" data.
`distmat`	The distance matrices.
`discvar`	(optional) Name of continuous variable columns that need to be discretized. Noted that when `formula` has `discvar`, `data` must have these columns. By default, all independent variables are used as `discvar`.
`discnum`	(optional) A vector of number of classes for discretization. Default is `3:8`.
`discmethod`	(optional) A vector of methods for discretization, default is using `c("sd","equal","geometric","quan` by invoking `sdsfun`.
`cores`	(optional) Positive integer (default is 1). When cores are greater than 1, use multi-core parallel computing.
`...`	(optional) Other arguments passed to `gdverse::gd_optunidisc()`. A useful parameter is `seed`, which is used to set the random number seed.

Value

A `tibble`.

Examples

```
gtc = readr::read_csv(system.file("extdata/gtc.csv", package = "localsp"))
gtc


# Sample 100 observations from the original data to save runtime;
# This is unnecessary in practice;
set.seed(42)
gtc1 = gtc[sample.int(nrow(gtc),size = 100),]
distmat = as.matrix(dist(gtc1[, c("X","Y")]))
gtc1 = gtc1[, -c(1,2)]
gtc1

# Use 2 cores for parallel computing;
# Increase cores in practice to speed up;
lisp(GTC ~ ., data = gtc1, threshold = 4.2349, distmat = distmat,
     discnum = 3:5, discmethod = "quantile", cores = 2)
```

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