

Package ‘localsp’

May 8, 2026

Title Local Indicator of Stratified Power

Version 0.1.0

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](https://doi.org/10.1080/13658816.2024.2437811)>.

License GPL-3

Encoding UTF-8

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

NeedsCompilation no

Author Jiao Hu [aut, cph] (ORCID: <<https://orcid.org/0000-0002-9644-9763>>),
Wenbo Lv [aut, cre] (ORCID: <<https://orcid.org/0009-0002-6003-3800>>),
Yongze Song [aut] (ORCID: <<https://orcid.org/0000-0003-3420-9622>>)

Maintainer Wenbo Lv <lyu.geosocial@gmail.com>

Repository CRAN

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`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

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