# Package: localsp (via r-universe)

October 16, 2026

**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** 7.3.3

**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 (>= 1.6), parallel, purrr, sf, tibble, tidyr

**Suggests** automap, gstat, knitr, readr, rmarkdown, sdsfun

**VignetteBuilder** knitr

**Config/pak/sysreqs** libabsl-dev cmake libfontconfig1-dev libfreetype6-dev libgdal-dev gdal-bin libgeos-dev make libicu-dev libpng-dev libuv1-dev libssl-dev libproj-dev python3 libsqlite3-dev libudunits2-dev

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

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

**RemoteRef** HEAD

**RemoteSha** 532f61811860dfbbc99e95b940ec5508d0a52c53

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`lisp` *local indicator of stratified power*

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## 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 = 8, distmat = distmat,
     discnum = 3:5, discmethod = "quantile", cores = 2)
```

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