

Package: itmsa (via r-universe)

January 22, 2025

Title Information-Theoretic Measures for Spatial Association

Version 0.2.0

Description Leveraging information-theoretic measures like mutual information and v-measure to quantify spatial associations between patterns (Nowosad and Stepinski (2018) <[doi:10.1080/13658816.2018.1511794](https://doi.org/10.1080/13658816.2018.1511794)>; Bai, H. et al. (2023) <[doi:10.1080/24694452.2023.2223700](https://doi.org/10.1080/24694452.2023.2223700)>).

License GPL-3

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.2

URL <https://stscl.github.io/itmsa/>, <https://github.com/stscl/itmsa>

BugReports <https://github.com/stscl/itmsa/issues>

Depends R (>= 4.1.0)

LinkingTo Rcpp, RcppThread

Imports dplyr, purrr, sdsfun (>= 0.6.0), sf

Suggests knitr, Rcpp, RcppThread, readr, rmarkdown, tibble

VignetteBuilder knitr

Config/pak/sysreqs libgdal-dev gdal-bin libgeos-dev libssl-dev libproj-dev libsqlite3-dev libudunits2-dev

Repository <https://stscl.r-universe.dev>

RemoteUrl <https://github.com/stscl/itmsa>

RemoteRef HEAD

RemoteSha 53b7ffa6ec3ef8188412b692a6915e424ccba3ed

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Description

Information-Theoretic Measures for Spatial Association

Usage

```
itm(  
  formula,  
  data,  
  method = c("vm", "icm"),  
  beta = 1,  
  unit = c("e", "2", "10"),  
  seed = 42,  
  permutation_number = 999  
)
```

Arguments

formula	A formula.
data	A data.frame, tibble or sf object of observation data.
method	(optional) whether vm(default) or icm.
beta	(optional) The β value used fo vm measure, default is 1.
unit	(optional) Logarithm base, default is e.
seed	(optional) Random number seed, default is 42.
permutation_number	(optional) Number of Random Permutations, default is 999.

Value

A tibble.

Examples

```
sim = readr::read_csv(system.file('extdata/sim.csv', package = 'itmsa'))  
  
# Information-theoretical V-measure  
itm(z1 ~ z2, data = sim, method = 'vm')  
# Information Consistency-Based Measures  
itm(z1 ~ z2, data = sim, method = 'icm')
```

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