Package ‘SpatialPOP’

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Type Package

Title Generation of Spatial Data with Spatially Varying Model Parameter

Version 0.1.0

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Depends R(>= 2.10)

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

VignetteBuilder knitr

Description A spatial population can be generated based on spatially varying regression model under the assumption that observations are collected from a uniform two-dimensional grid consist of (m * m) lattice points with unit distance between any two neighbouring points. For method details see Chao, Liu., Chuanhua, Wei. and Yu-nan, Su. (2018).<DOI:10.1080/10485252.2018.1499907>. This spatially generated data can be used to test different issues related to the statistical analysis of spatial data. This generated spatial data can be utilized in geographically weighted regression analysis for studying the spatially varying relationships among the variables.

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Encoding UTF-8

RoxygenNote 7.1.2

Imports base,MASS,stats, qpdf, numbers

NeedsCompilation no

Repository CRAN

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spatialPOP  
*Generation of Spatial Data with Spatial Coordinates and Spatially Varying Model Parameters*

**Description**

Generation of Spatial Data with Spatial Coordinates and Spatially Varying Model Parameters

**Usage**

`spatialPOP(N, m, xlat, ylong)`

**Arguments**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>integer; population size i.e. N = (m * m)</td>
</tr>
<tr>
<td>m</td>
<td>integer</td>
</tr>
<tr>
<td>xlat</td>
<td>numeric vector</td>
</tr>
<tr>
<td>ylong</td>
<td>numeric vector</td>
</tr>
</tbody>
</table>

**Value**

returns a dataframe of spatially generated population consist of simulated response variable (i.e. Y) along with their spatial coordinates, spatially varying model parameters and one explanatory variable (i.e. X)

**References**


**Examples**

```r
lattice_points<-spatial_grid(c(1:10),c(1:10))
spatial_data<-spatialPOP(100,10,c(1:10),c(1:10))
```
spatial_grid

spatial_grid is a uniform two dimensional grid of lattice points.

Usage

spatial_grid(lat, long)

Arguments

lat numeric vector
long numeric vector

Value

returns a dataframe of lattice points

Examples

spatial_grid(c(1:10), c(1:10))
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