

Package ‘CoastlineFD’

January 14, 2024

Title Calculation of the Fractal Dimension of a Coastline

Version 1.1.2

Author Zhao Shiqi [aut, cre]

Maintainer Zhao Shiqi <zhao0101010101@gmail.com>

URL <https://github.com/redworld123/CoastlineFD>

BugReports <https://github.com/redworld123/CoastlineFD/issues>

Description Calculating the fractal dimension of a coastline using the boxes and dividers methods.

License MIT + file LICENSE

Encoding UTF-8

RoxygenNote 7.2.3

Imports sf, tidyr, utils, fields, readxl, writexl, ggplot2, progress,
sfheaders

NeedsCompilation no

Repository CRAN

Date/Publication 2024-01-14 09:00:02 UTC

R topics documented:

BoxesFD	2
DividersFD	3
FD	4
Index	5

BoxesFD

*BoxesFD***Description**

Calculation of the fractal dimension of a coastline using the boxes methods

Usage

```
BoxesFD(BinputPath, netPath, outputPath, year, r, pearsonValue, writeF, showF)
```

Arguments

BinputPath	All origin coastline files path
netPath	All fishnet files path
outputPath	All results will be exported here
year	R vector object, which represent your study time
r	R vector object, which represent your study scale
pearsonValue	The Pearson coefficient of your input data
writeF	Exporting Function's result
showF	Drawing Function's result

Value

An .xlsx file containing the results of the coastline fractal dimension

Examples

```
BinputPath = list.files(system.file('extdata', package = 'CoastlineFD'), full.names = TRUE)[1]
netPath = list.files(system.file('extdata', package = 'CoastlineFD'), full.names = TRUE)[3]
outputPath = paste0(system.file('extdata', package = 'CoastlineFD'), "/FD1985_1986.xlsx")
```

```
BoxesFD(
  BinputPath,
  netPath,
  outputPath,
  c(1985:1986),
  c(300, 600, 900, 1000, 1050, 1100),
  0.00,
  FALSE,
  TRUE
)
```

DividersFD

DividersFD

Description

Calculation of the fractal dimension of a coastline using the dividers methods

Usage

```
DividersFD(DinputPath, outputPath, year, r, pearsonValue, writeF, showF)
```

Arguments

DinputPath	All density coastline files path
outputPath	All results will be exported here
year	R vector object, which represent your study time
r	R vector object, which represent your study scale
pearsonValue	The Pearson coefficient of your input data
writeF	Exporting Function's result
showF	Drawing Function's result

Value

An .xlsx file containing the results of the coastline fractal dimension

Examples

```
DinputPath = list.files(system.file('extdata', package = 'CoastlineFD'), full.names = TRUE)[2]
outputPath = paste0(system.file('extdata', package = 'CoastlineFD'), "/FD1985_1986.xlsx")
```

```
DividersFD(
  DinputPath,
  outputPath,
  c(1985:1986),
  c(300, 600, 900, 1000, 1050, 1100),
  0.00,
  FALSE,
  TRUE
)
```

FD	<i>FD</i>
----	-----------

Description

Calculation of the fractal dimension of a coastline using both methods

Usage

```
FD(DinputPath, BinputPath, netPath, outputPath, year, r, pearsonValue, writeF, showF)
```

Arguments

DinputPath	All density coastline files path
BinputPath	All origin coastline files path
netPath	All fishnet files path
outputPath	All results will be exported here
year	R vector object, which represent your study time
r	R vector object, which represent your study scale
pearsonValue	The Pearson coefficient of your input data
writeF	Exporting Function's result
showF	Drawing Function's result

Value

An .xlsx file containing the results of the coastline fractal dimension

Examples

```
DinputPath = list.files(system.file('extdata', package = 'CoastlineFD'), full.names = TRUE)[2]
BinputPath = list.files(system.file('extdata', package = 'CoastlineFD'), full.names = TRUE)[1]
netPath = list.files(system.file('extdata', package = 'CoastlineFD'), full.names = TRUE)[3]
outputPath = paste0(system.file('extdata', package = 'CoastlineFD'), "/FD1985_1986.xlsx")
```

```
FD(
  DinputPath,
  BinputPath,
  netPath,
  outputPath,
  c(1985:1986),
  c(300, 600, 900, 1000, 1050, 1100),
  0.00,
  FALSE,
  TRUE
)
```

Index

BoxesFD, [2](#)

DividersFD, [3](#)

FD, [4](#)