

# Package ‘CoastlineFD’

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**Title** Calculation of the Fractal Dimension of a Coastline

**Version** 1.1.2

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**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

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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
)
```

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DividersFD

*DividersFD*

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### 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  
)
```

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FD *FD*

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### 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
)
```

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