Package ‘ibeemd’

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Type Package
Title Irregular-lattice based ensemble empirical mode decomposition
Version 1.0.1
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Depends R (>= 2.11.0), fields, deldir, rgeos, sp, spdep
Suggests rgdal
Description A data-driven and adaptive hierarchical-scale decomposition method for irregular-
lattice field (represented by polygons).
License GPL (>= 2.0)
NeedsCompilation no
Repository CRAN
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R topics documented:

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ibeemd

Scale decomposition for polygon data.

Description

Similar to 2-dimensional wavelet decomposition, for a given irregular-lattice field represented by
spatial polygons dataframe, the method decompose the field into different scales and a global trend
component by EEMD method. The scale components are also called also called intrinsic mode
functions (IMFs), which represent different scale information in the spatial field.
Usage
ibeemd(spPolysDf, valueField = names(spPolysDf)[1], nMaxIMF = 10, tolSift = 0.05, neemd = 1000, wnsd = 0.05, fmodel = "thinplate", fig = TRUE)

Arguments
spPolysDf a SpatialPolygonsDataFrame object.
valueField a field name that stores value.
nMaxIMF maximum number of components to be decomposed.
tolSift sift tolerance, a small number.
neemd number of EEMD iterations, a large number can make a stable result.
wnsd standard deviation of added noise; it is a ratio to the standard deviation of above data.
fmodel surface fitting function ("thinplate", "gaussian", "cubic", "multiquadric").
fig whether plot decomposed results.

Value
A SpatialPolygonsDataFrame with original value, decomposed imfs and global trend.

References

test run:
library(rgdal)

# polygon data
mydata <- system.file("extdata/simu.shp", package = "ibeemd")
layer <- basename(mydata)
layer <- substr(layer, 1, nchar(layer)-4)
mydataDF <- readOGR(dsn=mydata, layer=layer)
#spplot(mydataDF)

rslt <- ibeemd(sppolysdf = mydataDF, valueField = "value", nMaxIMF = 10, tolSift = 0.05, neemd = 500, wnsd = 0.05,
fmodel = "thinplate",
fig = TRUE)

## End(Not run)
#spplot(rslt)
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