dCommSignif

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dCommSignif *Function to test the significance of communities within a graph*

Description

dCommSignif is supposed to test the significance of communities within a graph. For a community of the graph, it first calculates two types of degrees for each node: degrees based on parters only within the community itself, and the degrees based on its parters NOT in the community but in the graph. Then, it performs two-sample Wilcoxon tests on these two types of degrees to produce the signficance level (p-value)

Usage

```
dCommSignif(g, comm)
```

Arguments

g	an object of class "igraph" or "graphNEL"
comm	an object of class "communities". Details on this class can be found at http://igraph.org/r/doc/communities.html

Value

- significance: a vector of p-values (significance)

Note

none

See Also

dCommSignif

Examples

```
# 1) generate an vector consisting of random values from beta distribution
x <- rbeta(1000, shape1=0.5, shape2=1)

# 2) fit a p-value distribution under beta-uniform mixture model
fit <- dBUMfit(x, ntry=1, hist.bum=FALSE, contour.bum=FALSE)

# 3) calculate the scores according to the fitted BUM and fdr=0.01
# using "pdf" method
scores <- dBUMscore(fit, method="pdf", fdr=0.05, scatter.bum=FALSE)
names(scores) <- as.character(1:length(scores))

# 4) generate a random graph according to the ER model
g <- erdos.renyi.game(1000, 1/100)

# 5) produce the induced subgraph only based on the nodes in query
subg <- dNetInduce(g, V(g), knn=0)

# 6) find the module with the maximum score
module <- dNetFind(subg, scores)

# 7) find the module and test its signficance
comm <- walktrap.community(module, modularity=TRUE)
significance <- dCommSignif(module, comm)
```