

weighted_richclub_w

Last Updated Friday, 04 December 2009

This function calculates the weighted rich-club coefficient proposed in Opsahl, T., Colizza, V., Panzarasa, P., Ramasco, J.J. "Prominence and control: The weighted rich-club effect". Physical Review Letters 101 (168702; arXiv: 0804.0417).

It takes five parameters:

- net: the edgelist of a weighted one-mode network
- rich: "k", "s"; default "k"
- reshuffle: "weights" or "links"; default: "weights"
- NR: number of reshuffles; default: 100
- nbins: number of bins in the output
- seed: random seed
- directed: whether the network is directed; default=NULL which means that it is detected

```
Example## Load tnet
library(tnet)## Define sample data
sampledata <- rbind(
  c(1,2,4),
  c(1,3,2),
  c(2,1,4),
  c(2,3,4),
  c(2,4,1),
  c(2,5,2),
  c(3,1,2),
  c(3,2,4),
  c(4,2,1),
  c(5,2,2),
  c(5,6,1),
  c(6,5,1))## Run the function
weighted_richclub_w(sampledata, rich="k", reshuffle="weights")

      x   y   l99   l95   h95   h99
1 0.999990 1.000000 1.000000 1.000000 1.000000 1.000000
2 1.024179 1.286449 0.6432247 0.6432247 1.286449 1.286449
...
30 1.999990 1.286449 0.6432247 0.6432247 1.286449 1.286449
```