Package ‘disparityfilter’

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**Title**  Disparity Filter Algorithm of Weighted Network

**Version**  2.1

**Description**

Disparity filter is a network reduction algorithm to extract the backbone structure of both directed and undirected weighted networks. Disparity filter can reduce the network without destroying the multi-scale nature of the network. The algorithm has been developed by M. Angeles Serrano, Marian Boguna, and Alessandro Vespignani in Extracting the multiscale backbone of complex weighted networks, Proceedings of the national academy of sciences 106 (16).

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**Depends**  R (>= 3.1.1), igraph

**License**  GPL (>= 2)

**LazyData**  true

**NeedsCompilation**  no

**Repository**  CRAN

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**R topics documented:**

- get.backbone ................................................. 1
- network ......................................................... 2

**Index**  3
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Usage

```r
get.backbone(graph, alpha = 0.05, directed = FALSE)
```

Arguments

- `graph`: igraph graph object. The original weighted graph.
- `alpha`: Statistical significance level. By default is set to 0.05.
- `directed`: Logical, whether the network is directed or undirected. By default is set to FALSE.

Examples

```r
head(network)
G = graph.data.frame(network, directed = FALSE)
G_backbone = get.backbone(graph = G, alpha = 0.05, directed = FALSE)
```

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**network**

### Description

This data set gives the edgelist of a small sample network.

### Usage

```r
network
```

### Format

`network` is data frame containing 300 observations (rows) representing the edges of a small sample network, and 3 variables (columns) named `from`, `to`, and `weight` representing the vertices and the weight of the edges.
Index

*Topic backbone
  get.backbone, 1

*Topic datasets
  network, 2

*Topic disparity
  get.backbone, 1

*Topic extraction
  get.backbone, 1

*Topic filter
  get.backbone, 1

get.backbone, 1

network, 2