SummarizeNetworks

Description

Download PhyloNet

- The method can summarize common structures with their proportion from networks based on your selected summarizing mode.
- Input: a set of networks (with their proportion or number) that have the same taxa,
- Output: a set of common structures with their proportions.

- Reference: Practical Aspects of Phylogenetic Network Analysis Using PhyloNet.

Usage

```
SummarizeNetworks networks mode [-n] [-o]
```

networks	Comma delimited list of networks to summarize.	mandatory
mode	A number in {1,2,3,4,5}. 1: Displayed trees. Each tree is obtained from the network by removing one of the two reticulation edges for each reticulation node. 2: Backbone networks. Each backbone network is obtained by removing one of the two reticulation edges for each node in a subset of the set of all reticulation nodes. 3: Tree decomposition. A network is decomposed at each reticulations. Taxon names cannot include character "*" or "#" in this mode. 4: Tripartition. This tripartition is different from the one in Charnet. X : P1|P2, where X is the set of taxa that are under this reticulation node, and P1 and P2 are two sets of taxa that are under the two siblings of this reticulation node, respectively. 5: Major trees. If the input networks only contain topologies without inheritance probabilities, the user should not use this mode. Each major tree is obtained from the network by removing for each reticulation node the reticulation edge with the lower inheritance probability.	mandatory
-n	If specified, normalize input networks proportion, make their summation to be 1. Default value is false, which means no normalization.	optional
-o outputFile	If specified, the output file is outputFile. The default outputFile is SummarizeNetworks.txt under the user's directory.	optional

Examples

Input networks have proportions.

Download: wheatExample.nex

Please don't copy and paste, since some illegal characters might be copied.

```
#NEXUS

BEGIN NETWORKS;

Network net1=[&W 0.33]((((Ash,(At,TaD)))X#H1,Y#H2),((((Asp,TaB),X#H1),((TaA,Tu),Tm)))Y#H2);
Network net2=[&W 0.33]((((Ash,(At,TaD)))X#H1,((Asp,TaB),((((TaA,Tu),Tm),X#H1))Y#H2)),Y#H2);
Network net3=[&W 0.2]((((((Ash,(At,TaD)))X#H1,((Asp,TaB))Y#H2),((TaA,Tu),Tm)),X#H1),Y#H2);
Network net4=[&W 0.07]((((((Ash,(At,TaD)))X#H1,((Asp,TaB))Y#H2),((TaA,Tu),Tm)),Y#H2),X#H1);
Network net5=[&W 0.05]((((Ash,(At,TaD)))X#H1,((Asp,TaB))Y#H2),(((TaA,Tu),Tm),(X#H1,Y#H2)));
END;
BEGIN PHYLONET;

SummarizeNetworks (net1,net2,net3,net4,net5) 2 -n;

END;
```

Input networks don't have proportions.

Download: mpl4Sum.nex

Please don't copy and paste, since some illegal characters might be copied.

```
#NEXUS

BEGIN NETWORKS;
Network net1=((L:1.0)#H1:1.0::0.6775044779684056,((F:1.0,((K:1.0,(P:1.0)#H3:1.0::0.6753614616352684):
1.1244258148662702)#H2:1.5700202905515581::0.6135769094686397):5.938615025704547,(((#H1:1.0::0.3224955220315944)
#H4:1.0::0.7475384042289634,(#H2:5.938905009947807::0.38642309053136026,(C:1.0,#H4:1.0::0.2524615957710365):
5.913620320644154):5.912120605817229):5.94018448223261,(#H3:1.0::0.32463853836473155,O:1.0):2.8047977192873814):
5.903825230963656):5.93953170330228);
Network net2=((L:1.0)#H1:1.0::0.697819639034568,((F:1.0,((K:1.0,(P:1.0)#H3:1.0::0.6745110428348149):
1.1100661168406565)#H2:1.7082666741217403::0.6142669809548641):5.931845445367439,((#H3:1.0::0.3254889571651851,
O:1.0):2.4833570014727955,(#H2:5.929217003496626::0.3857330190451359,((#H1:1.0::0.302180360965432)#H4:1.0::
0.017142685450424855,(C:1.0,#H4:1.0::0.9828573145495751):5.91361935198872):5.9135981328244815):
5.925654204620761):5.9260404685243415):5.937215530824061);
Network net3=((L:1.0)#H1:1.0::0.697176914245199,(((((K:1.0,(P:1.0)#H3:1.0::0.6779314464962011):
1.0884181724604034)#H2:5.934653324530301::0.38618142938381267,(C:1.0,#H1:1.0::0.302823085754801):
5.9084237144406755):5.9397822589449465,((#H3:1.0::0.3220685535037989)#H4:1.0::0.017142685450424855,(#H4:1.0::
0.9828573145495751,O:1.0):0.00808293691880342):2.7714903993551276):5.904173024132873,(#H2:2.0126409278941 27::
0.6138185706161874,F:1.0):5.904657745927051):5.937801402829414);
Network net4=((L:1.0)#H1:1.0::0.6712728892686329,(((#H1:1.0::0.32872711073136707,(((K:1.0,(P:1.0)#H3:1.0::
0.6751112732063029):1.1267080674211265)#H2:5.938355167858189::0.38140833857114587,C:1.0):5.911170667122007):
5.939107582827078,(#H3:1.0::0.32488872679369707,O:1.0):2.860440724320893):5.926093346898221,(F:1.0,#H2:
1.6125835293541366::0.6185916614288541):5.9381572434685745):5.939517506695277);
Network net5=((L:1.0)#H1:1.0::0.6966745198922524,((F:1.0,(((P:1.0)#H3:1.0::0.683073175568802,K:1.0):
1.0524332659314857)#H2:2.5623058987490537::0.6104433712226643):5.906687726566634,((#H3:1.0::0.316926824431198,O:
1.0):3.4112578018682806,(#H2:5.937243226797915::0.38955662877733566,(C:1.0,#H1:1.0::0.3033254801077477):
5.909482135710924):5.909111928318673):5.9042519002108):5.9371033552041155);
END;
BEGIN PHYLONET;

SummarizeNetworks (net1,net2,net3,net4,net5) 1 -n;

END;
```

Command References

1. Zhen Cao, Xinhao Liu, Huw A. Ogilvie, Zhi Yan, and Luay Nakhleh. Practical Aspects of Phylogenetic Network Analysis Using PhyloNet.

See Also

- List of PhyloNet Commands