



vlado

1-neighbors

For selected years 1990, 1995, 2000, 2005, 2010, 2015, and 2020 we determined the 1-neighbors skeletons and produced their visualizations.

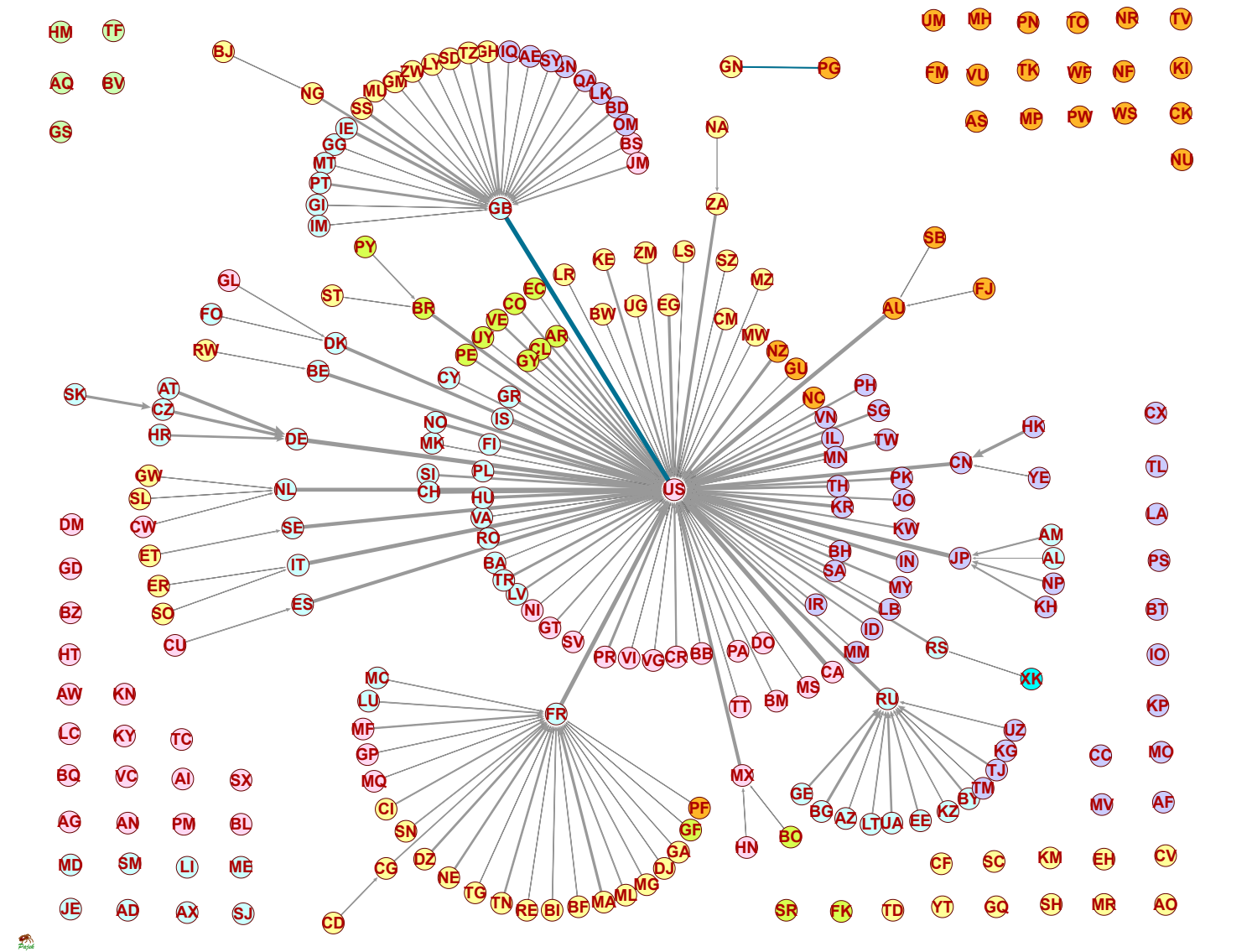
We prepared a Pajek macro `1-neighbors.mcr`

```
NETBEGIN 2
CLUBEGIN 1
PERBEGIN 1
CLSBEGIN 1
HIEBEGIN 1
VECBEGIN 1
NETPARAM 1

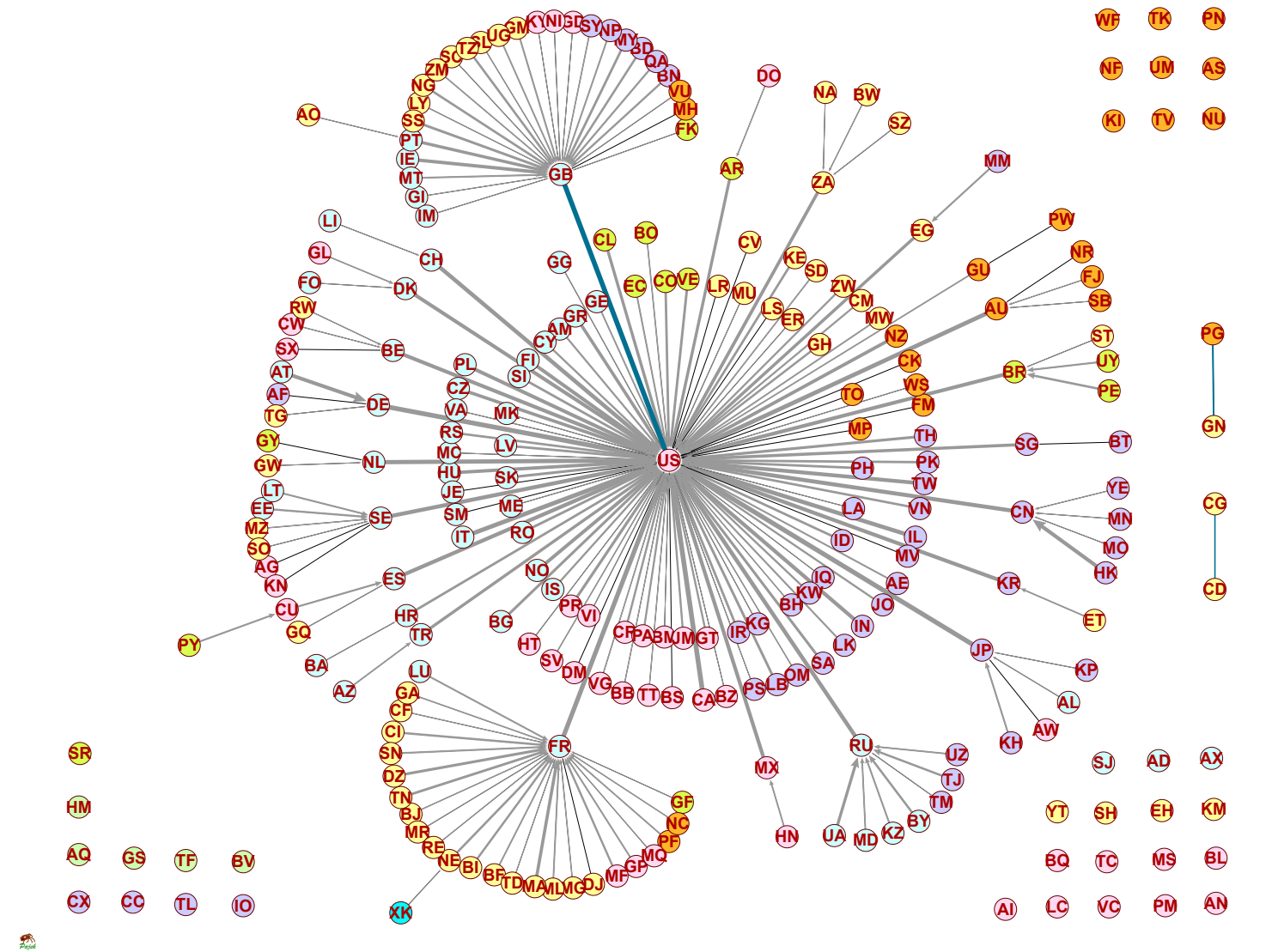
% Removing loops
N 2 DLOOPS 1 (251)
% Ln of Line Values
N 3 LNLINVAL 2 1 (251)
% Sorting and removing arcs with lowest values
N 4 REMLINVALVERT 3 1 2 0 (251)
% Converting bidirectional Arcs to Edges
N 4 BATOEMIN 4 (251)
N 4 NETNAME 1-neighbors
% Reading Partition --- continents.clu
C 1 RDC "?" (251)
% Loading INI File
LOADINI "1-WorldCo.ini"
% Reading Vector --- x.vec
V 1 RDV "?" (251)
% Reading Vector --- y.vec
V 2 RDV "?" (251)
% Putting Coordinate(s)
N 5 PUTCOORD 1 4 [1,1] (251)
% Putting Coordinate(s)
N 6 PUTCOORD 2 5 [2,1] (251)
E 6 DRAW 1 0 0 0 0
```

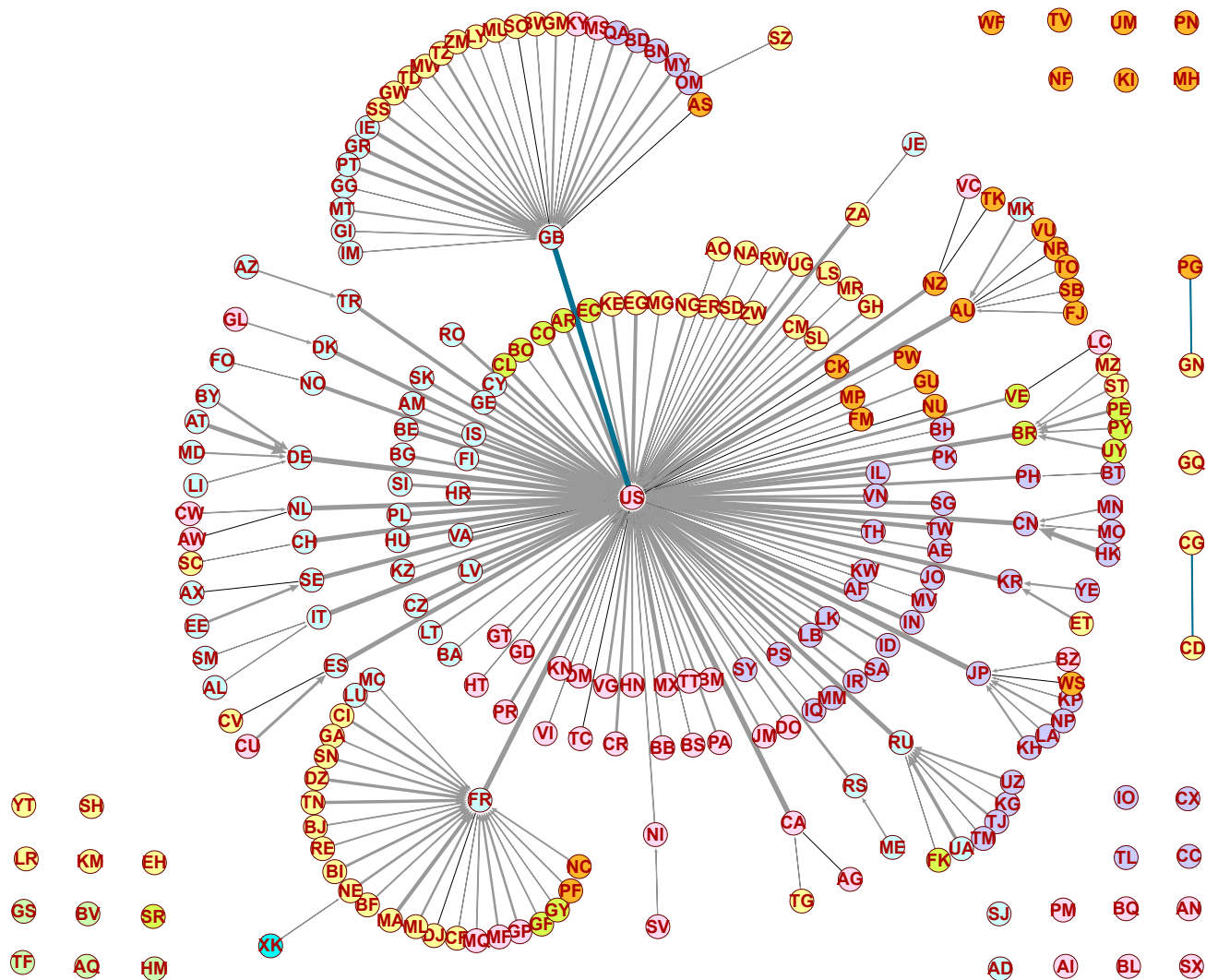
In the co-authorship network for a selected year, we first remove loops. Afterward, we transform the weights using logarithms $\ln(w)$. By removing in each node all links except the strongest (largest weight) we get the 1-neighbors skeleton. We replace pairs of opposite arcs with edges and read the partition `continents.clu`. To get the initial picture we load the ini file used in making the picture of the total (all years included) co-authorship network and assign to nodes the coordinates from that picture. Finally we draw the picture and manually improve it and save.

1990

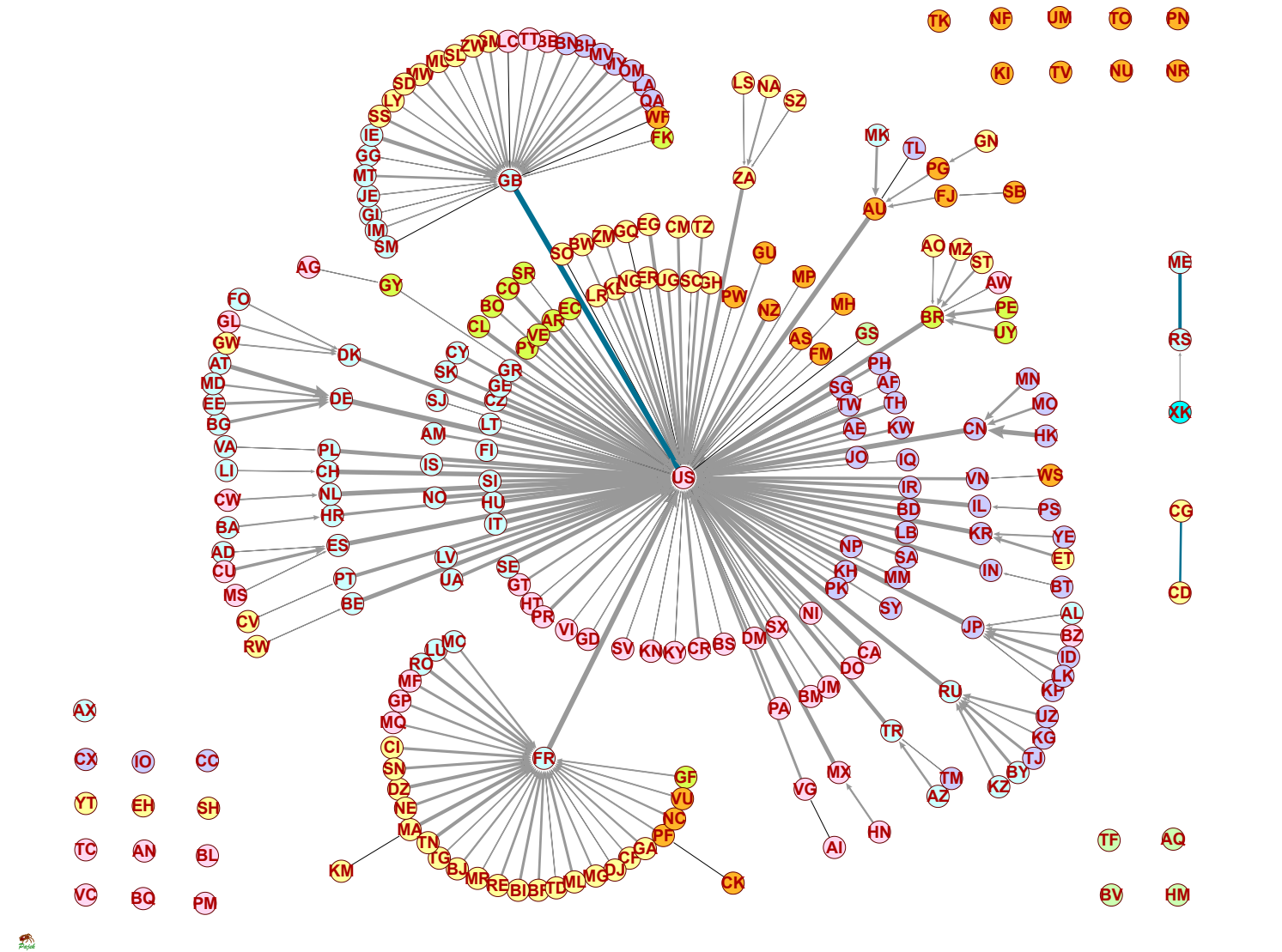


1995

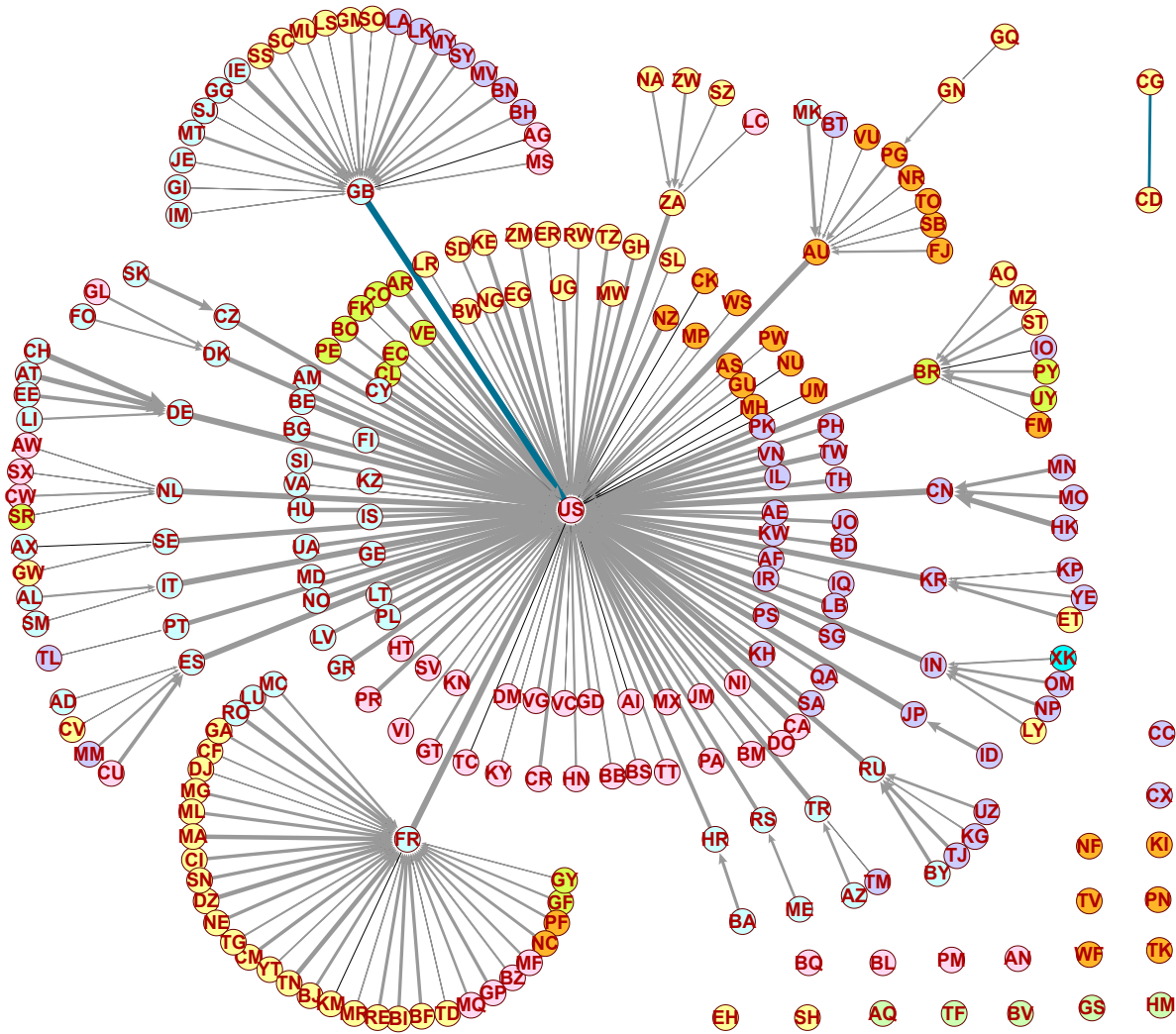




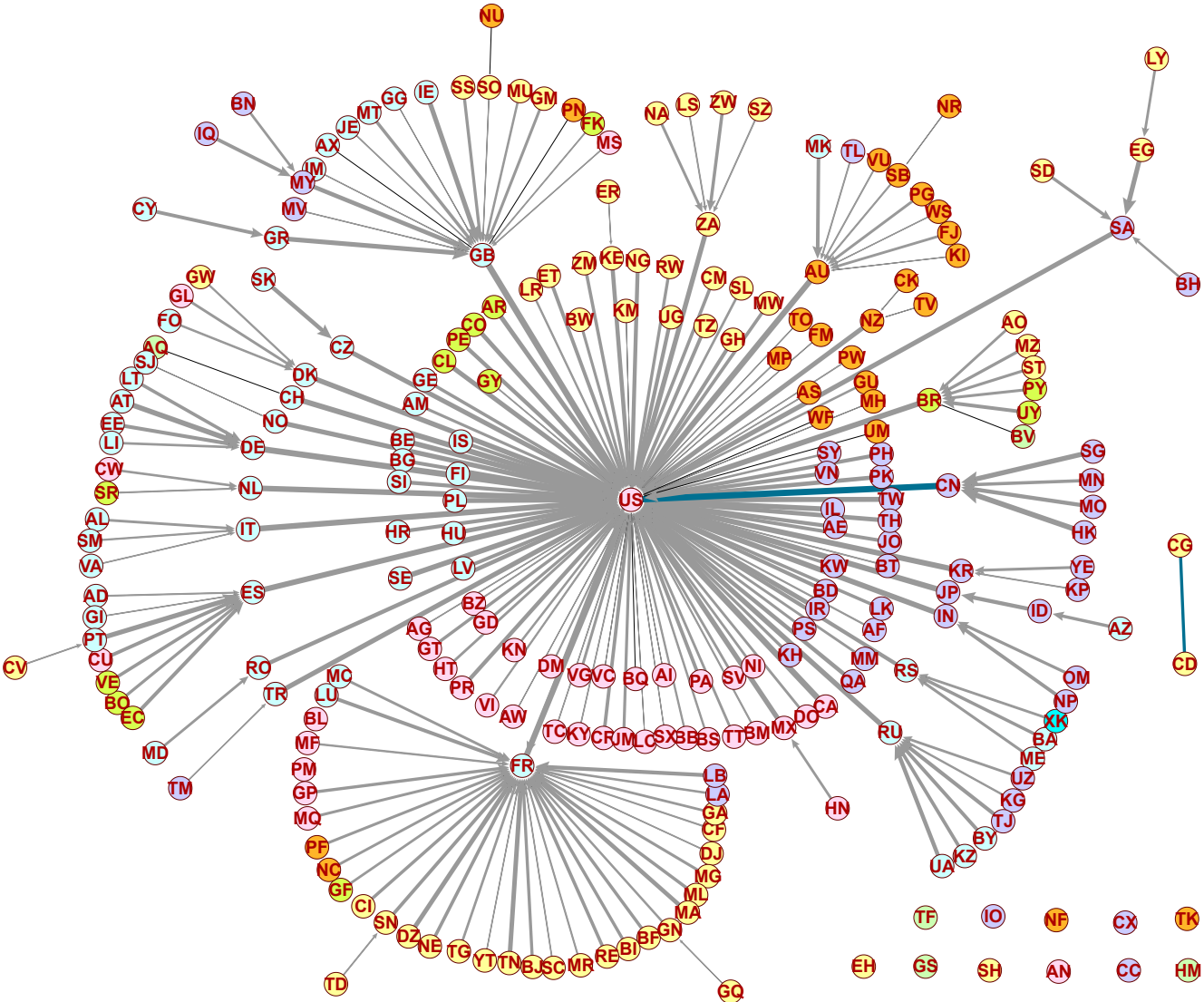
2005



2010



2015



2020

