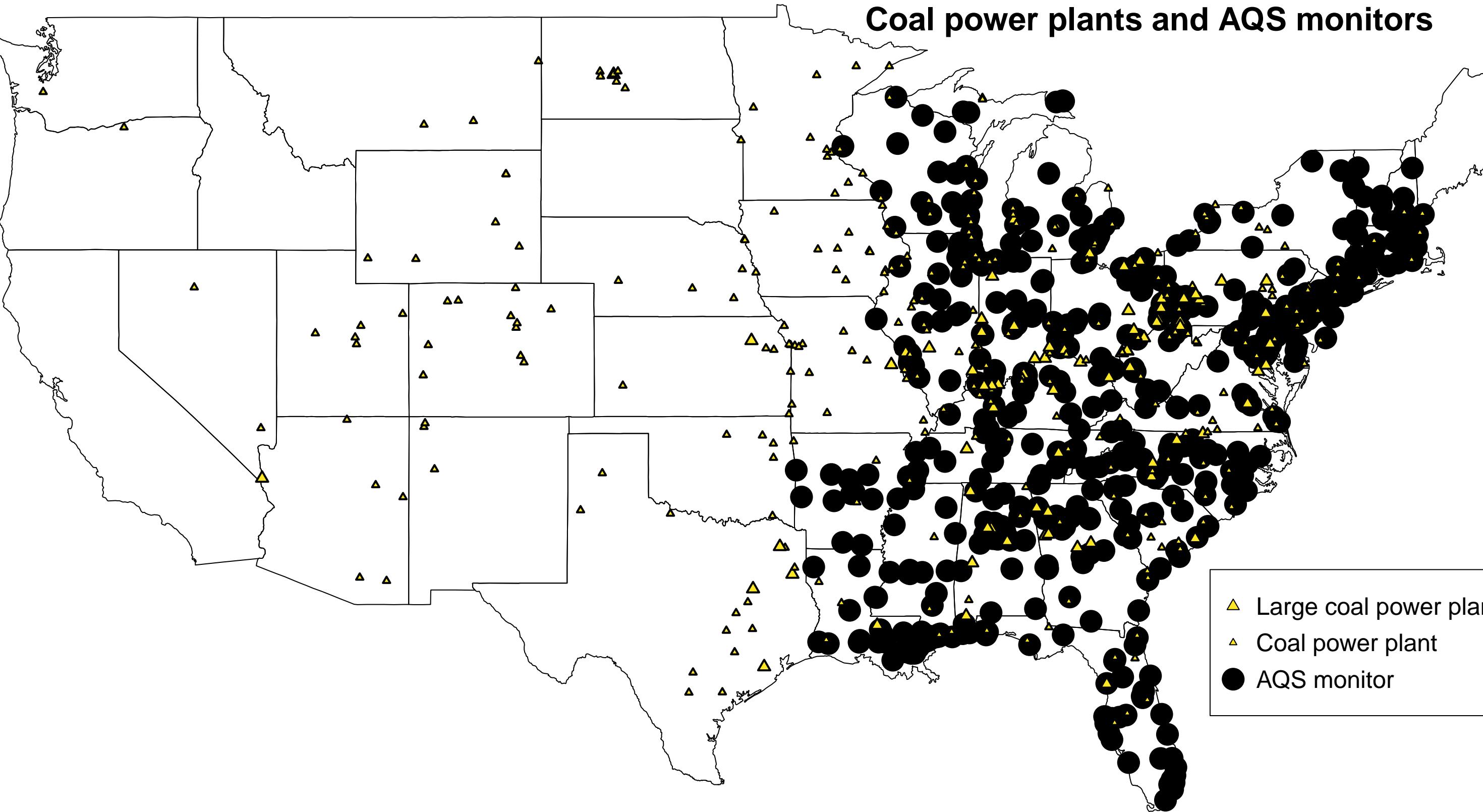
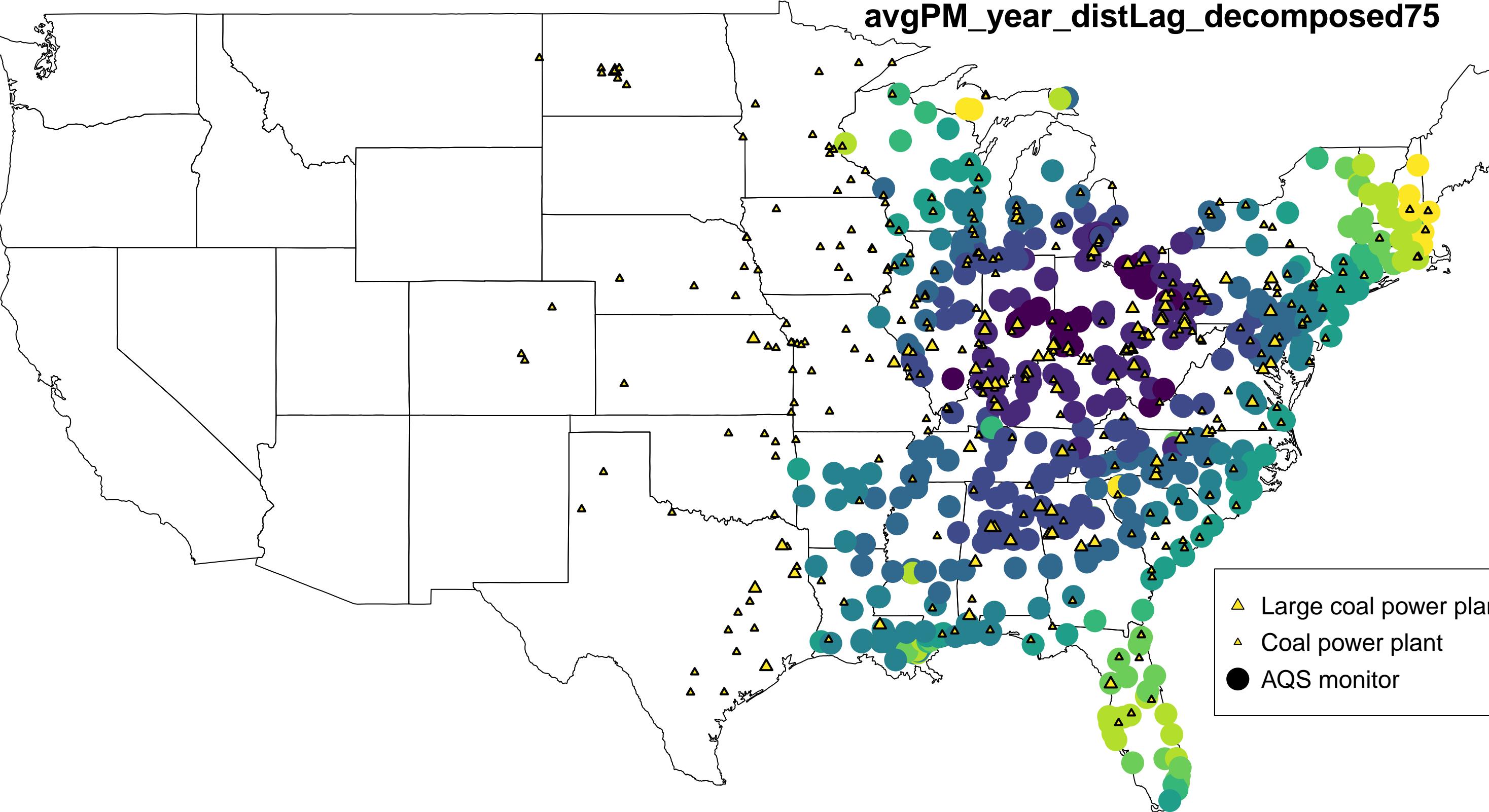


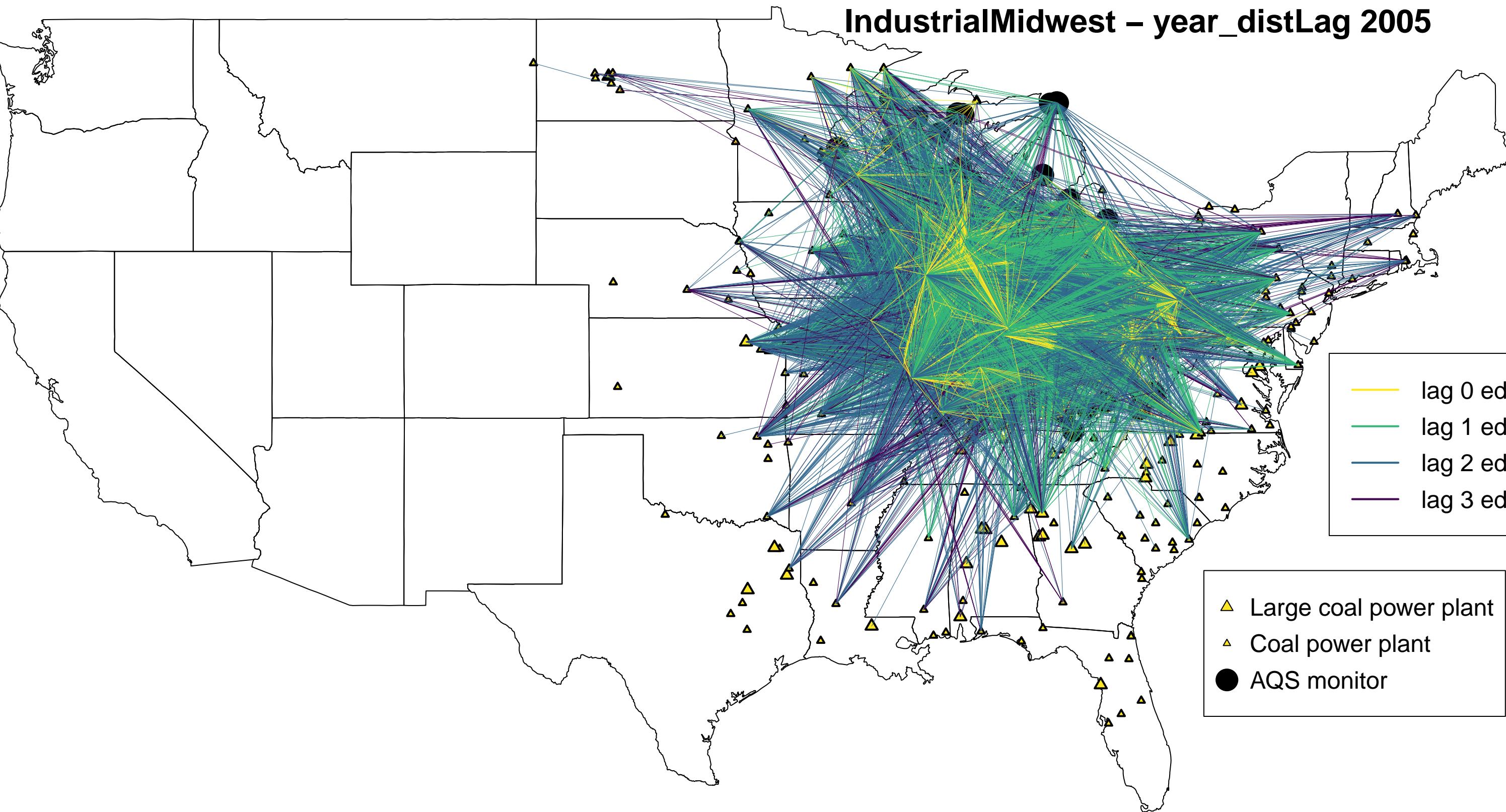
## Coal power plants and AQS monitors



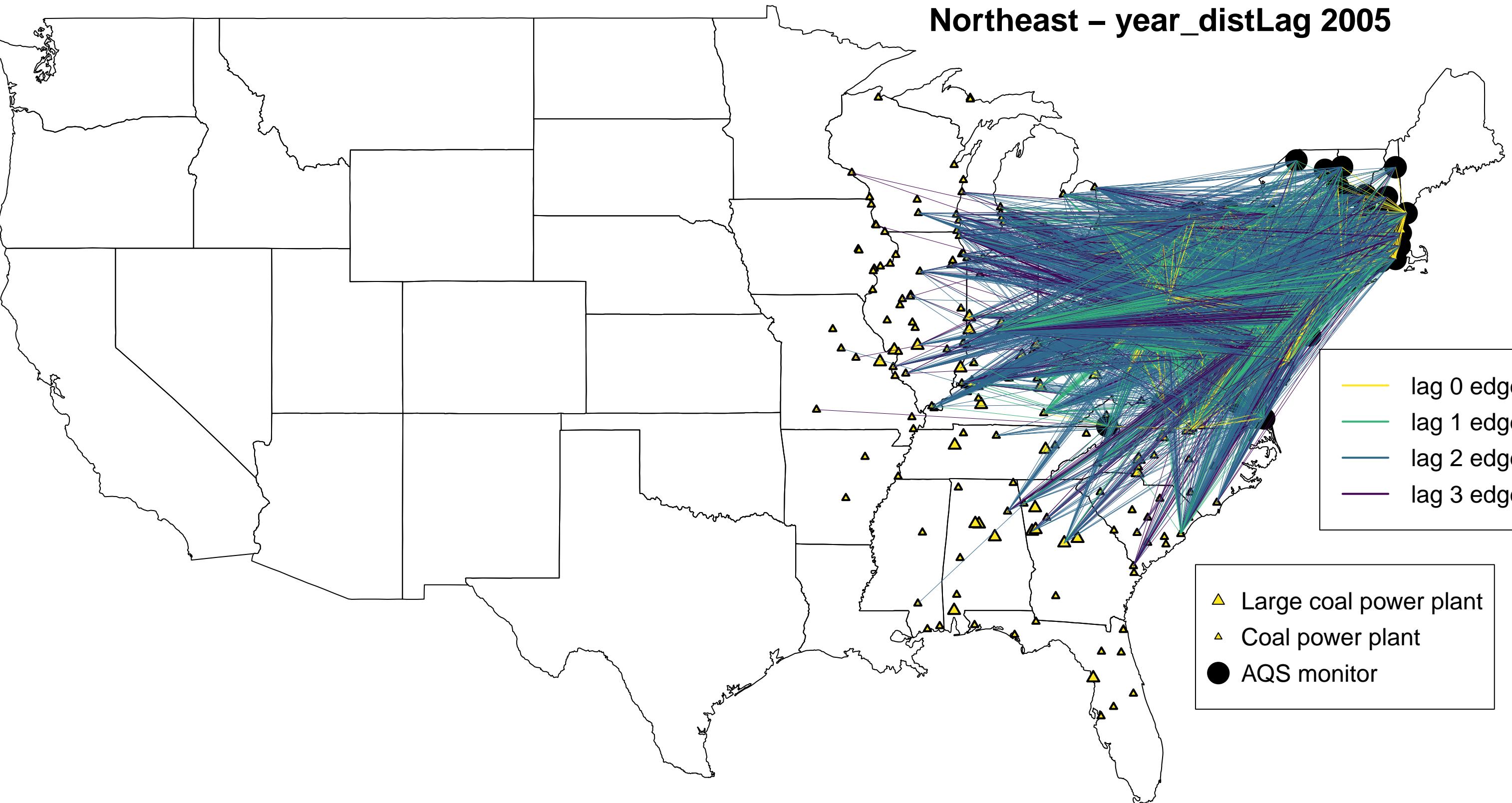
avgPM\_year\_distLag\_decomposed75



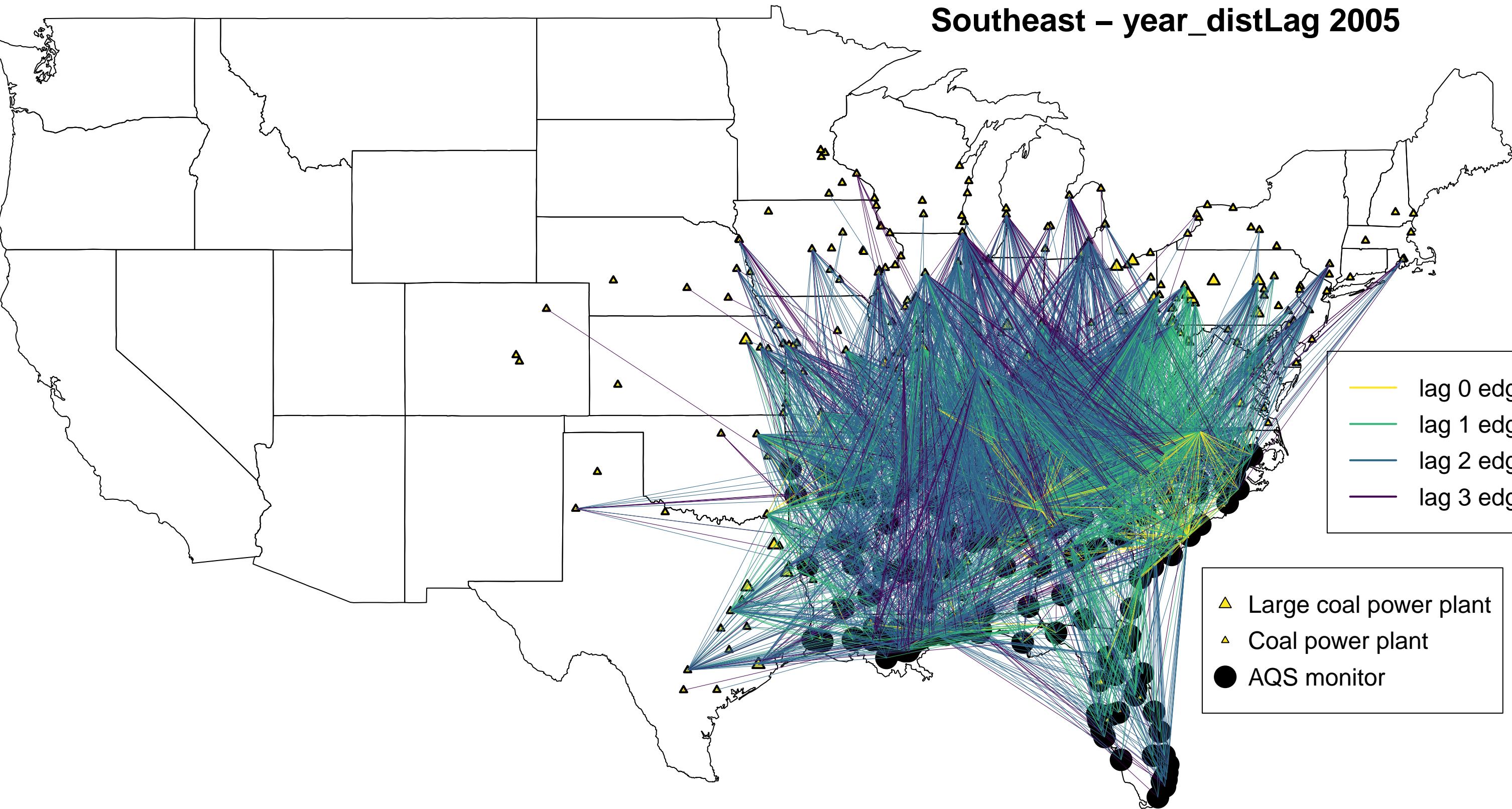
# IndustrialMidwest – year\_distLag 2005



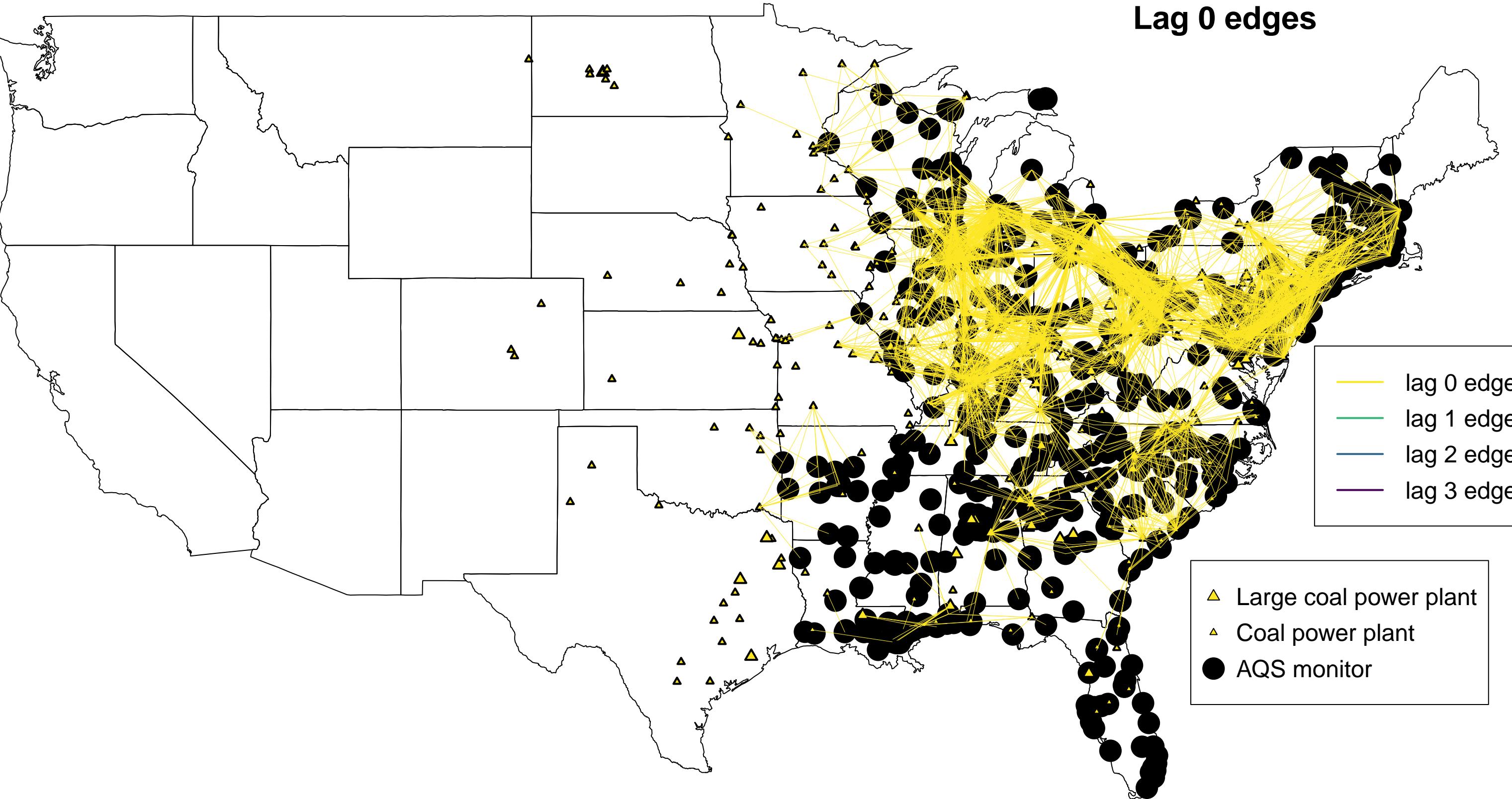
## Northeast – year\_distLag 2005



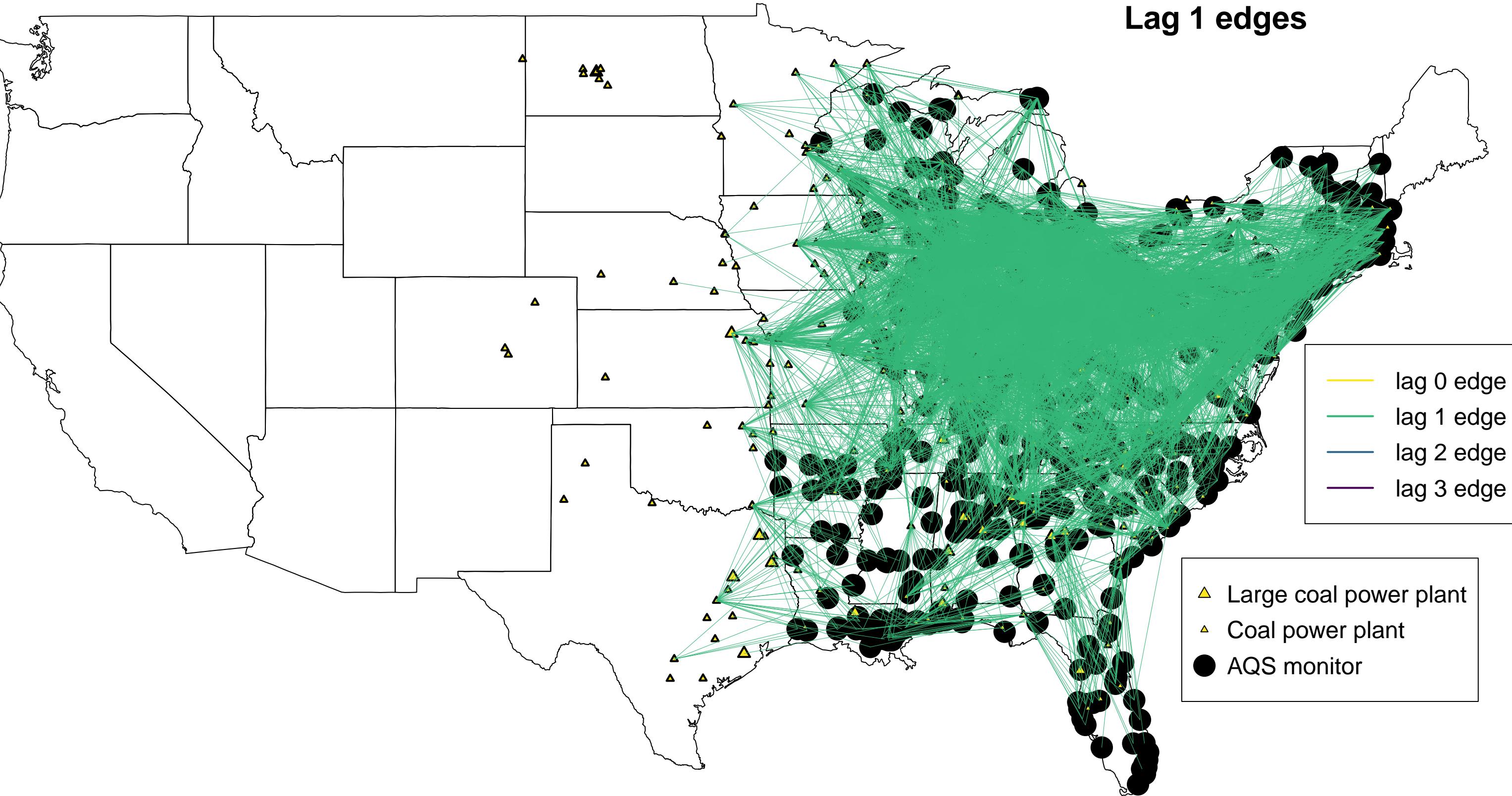
## Southeast – year\_distLag 2005



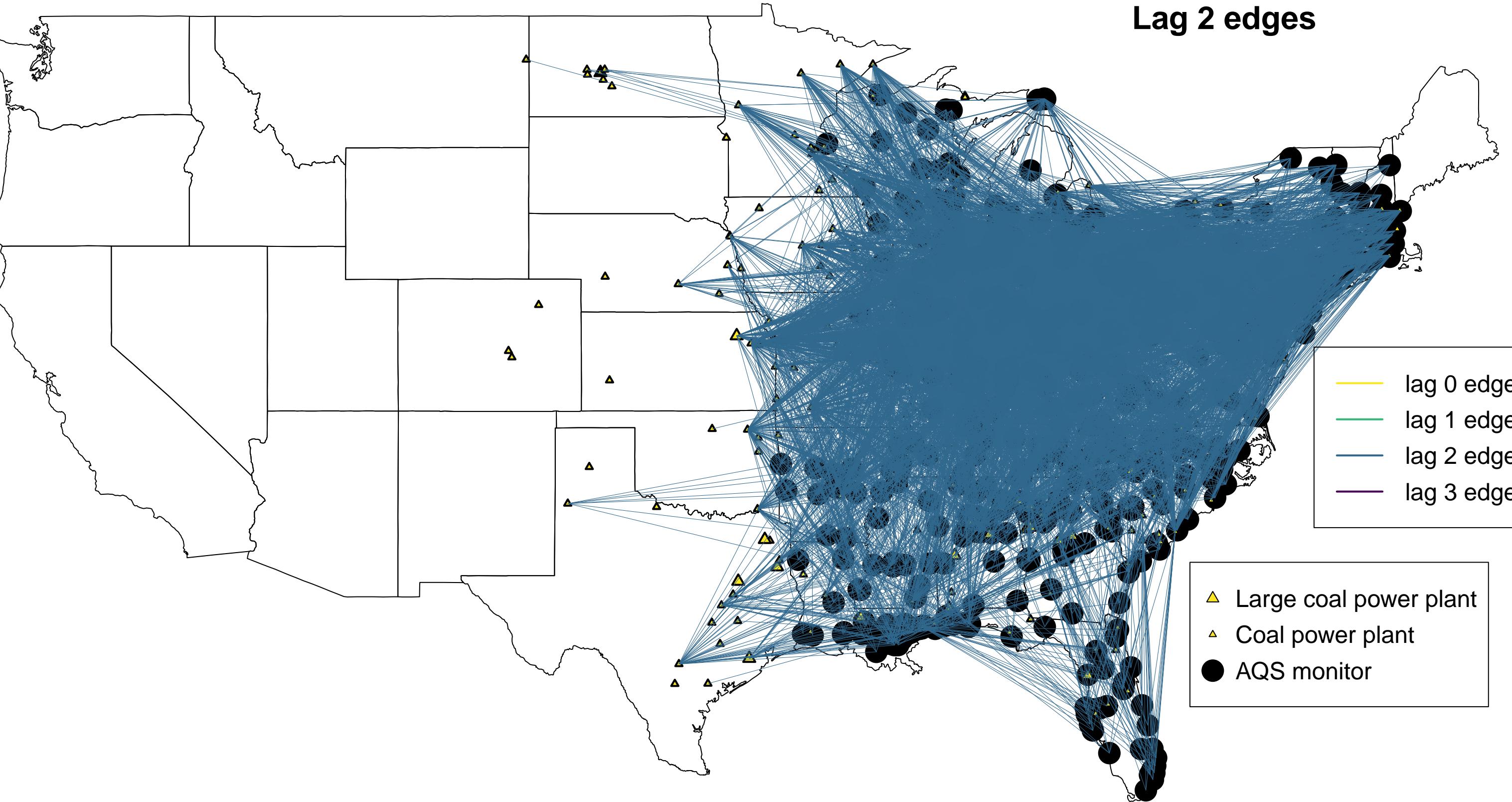
## Lag 0 edges



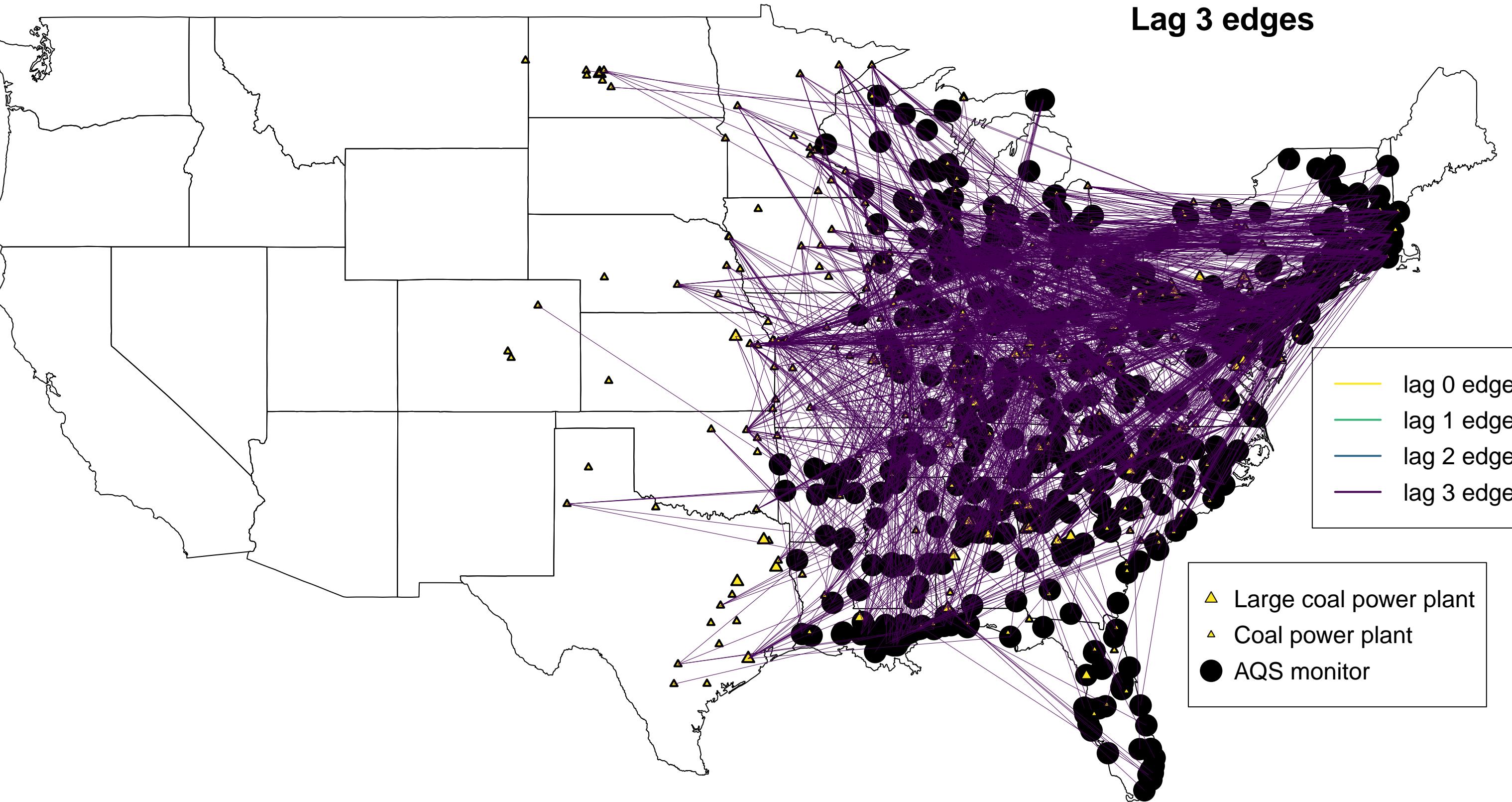
# Lag 1 edges

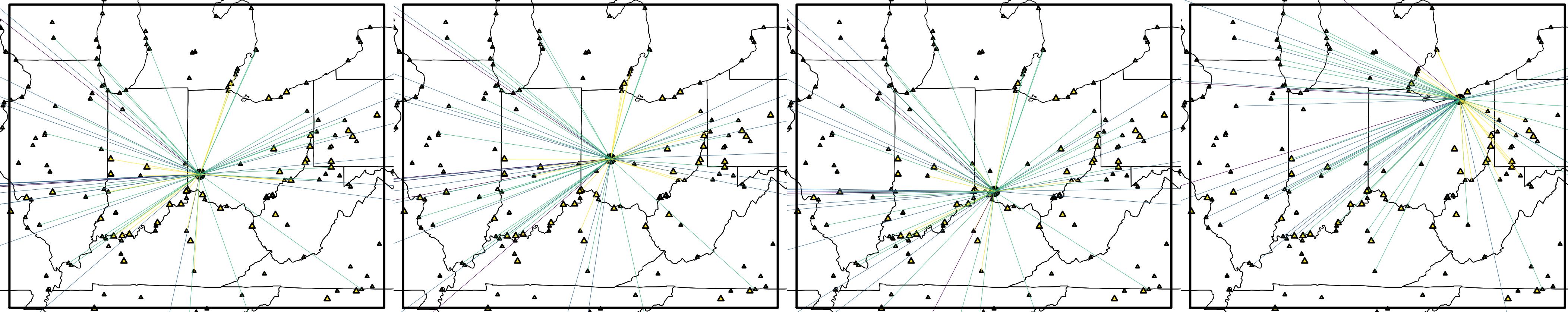
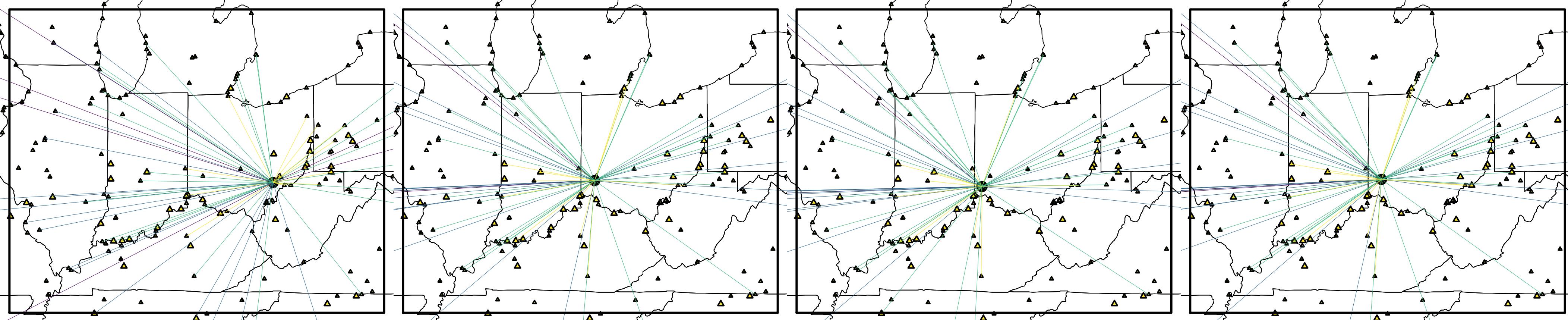


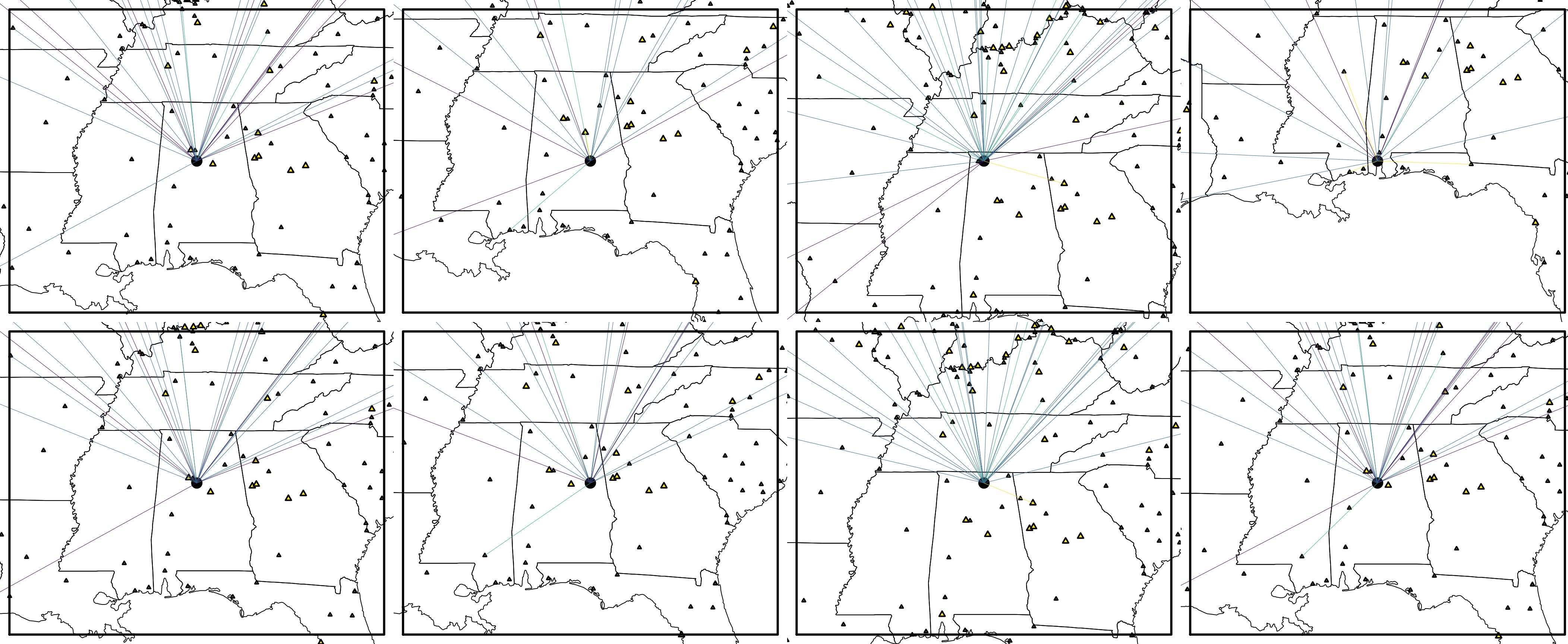
## Lag 2 edges

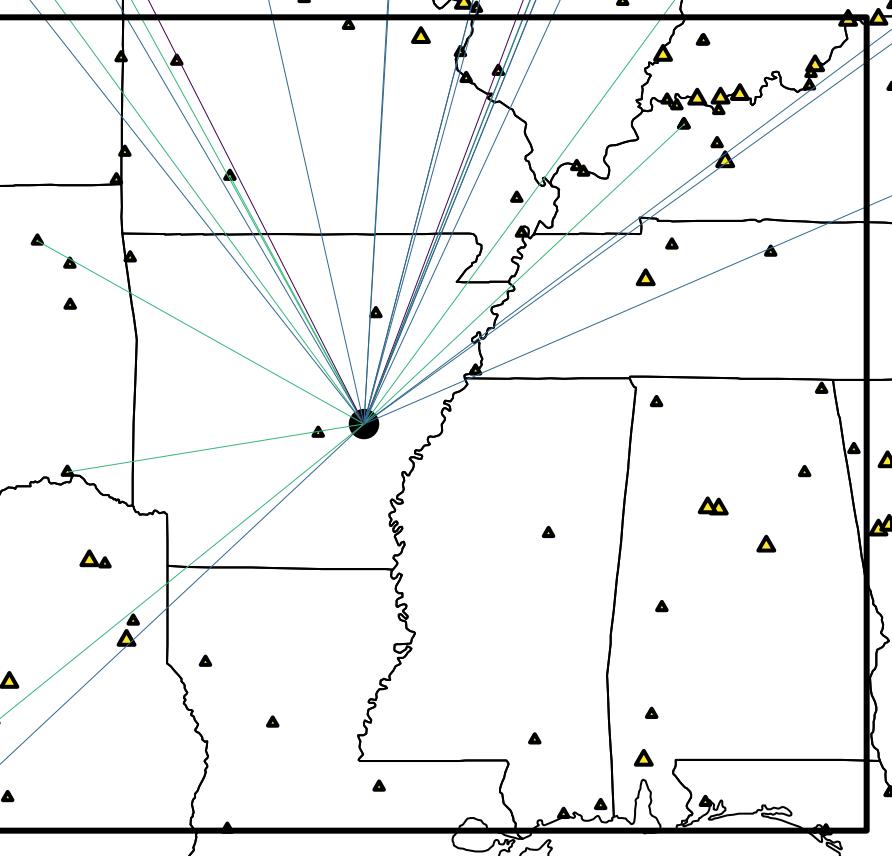
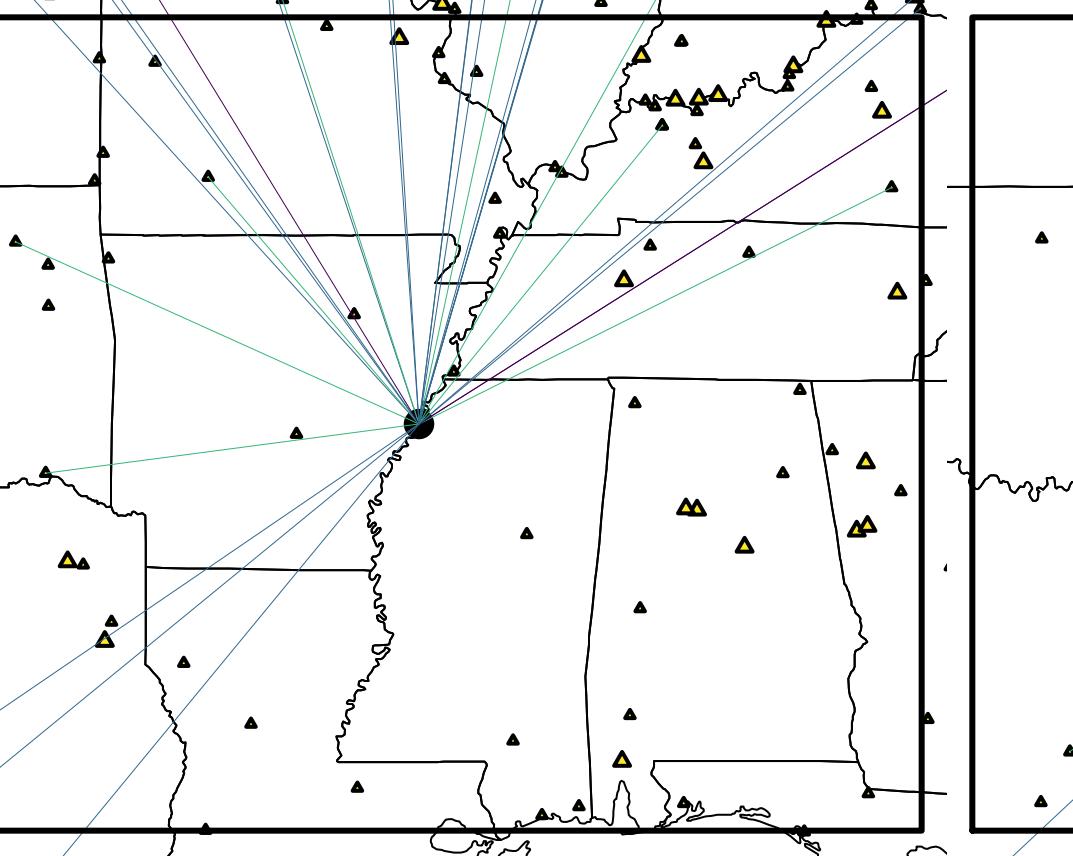
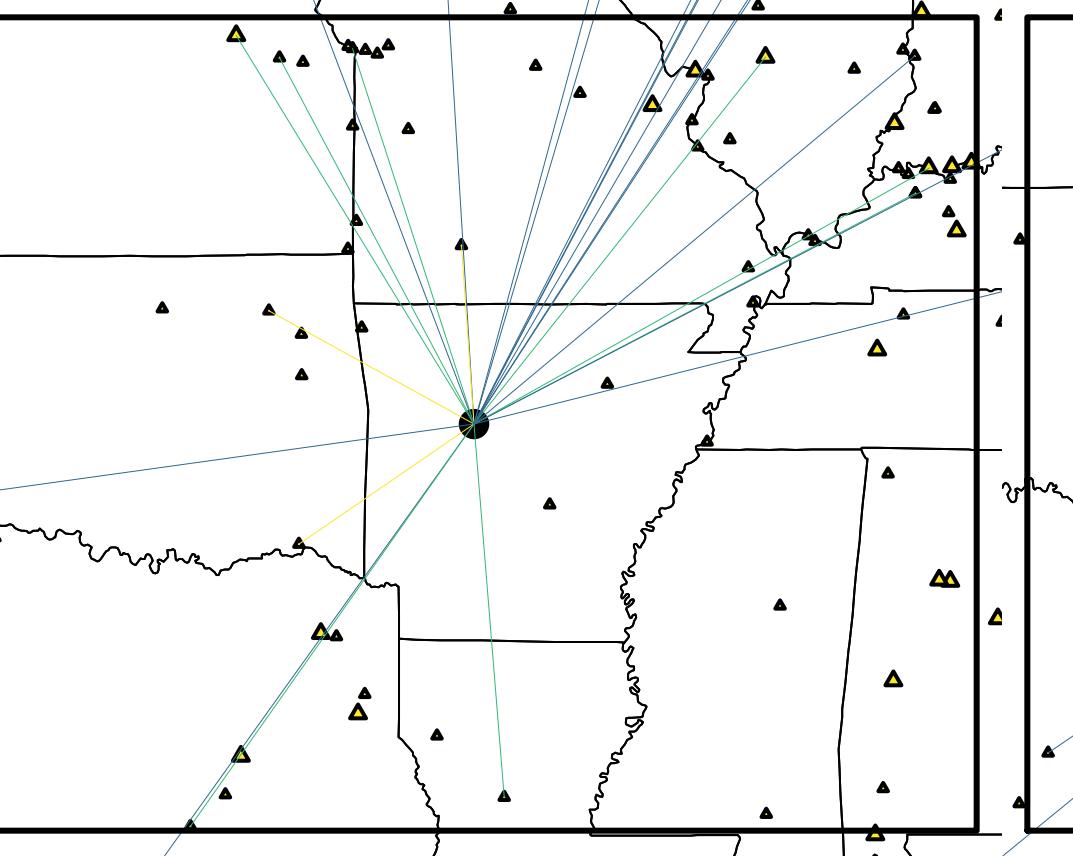
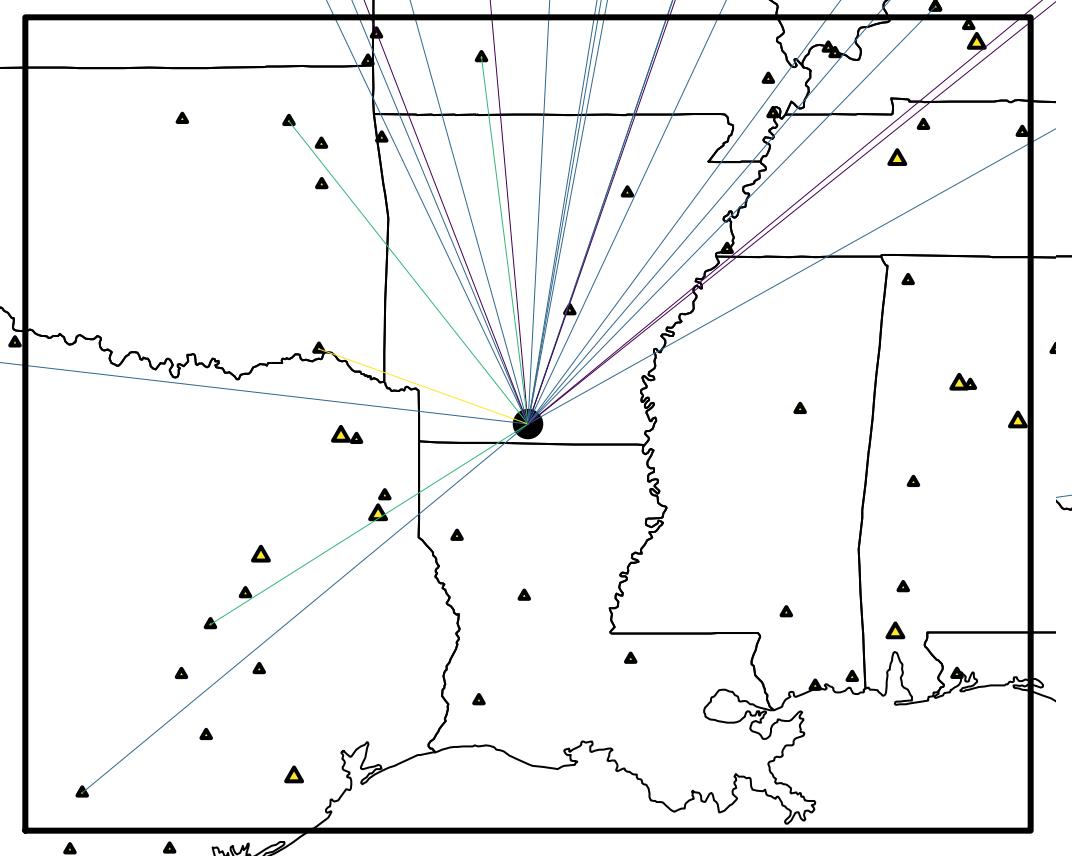
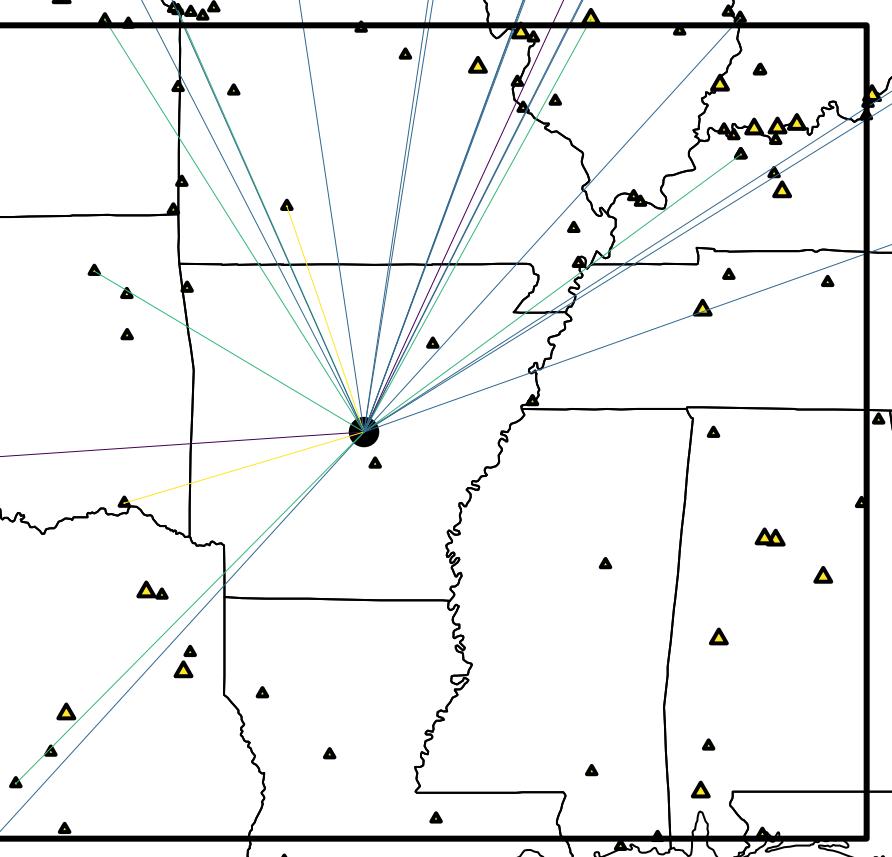
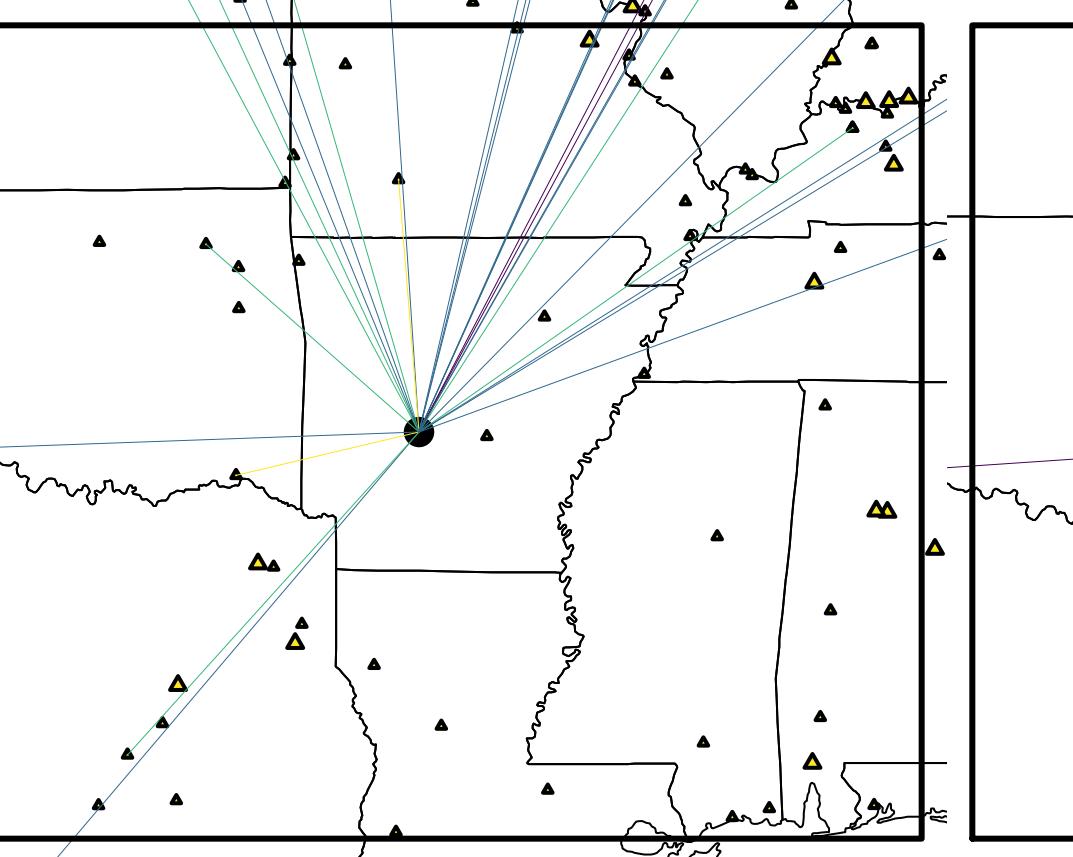
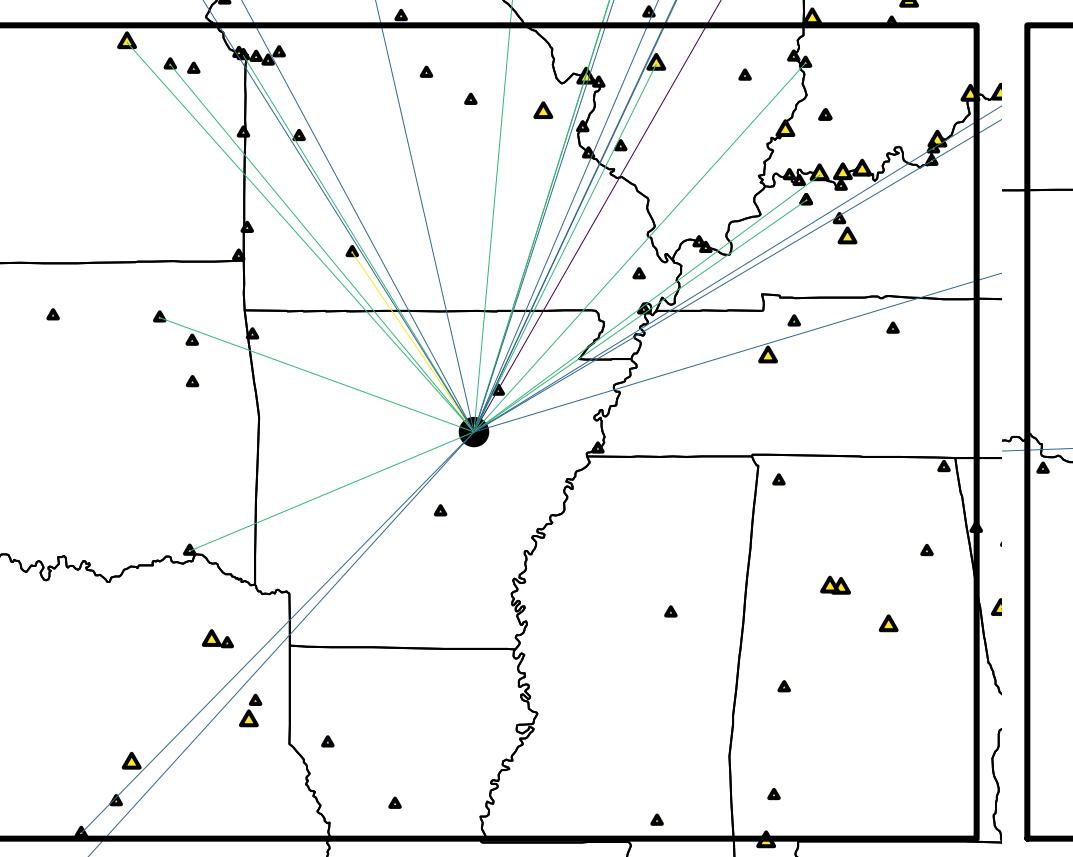
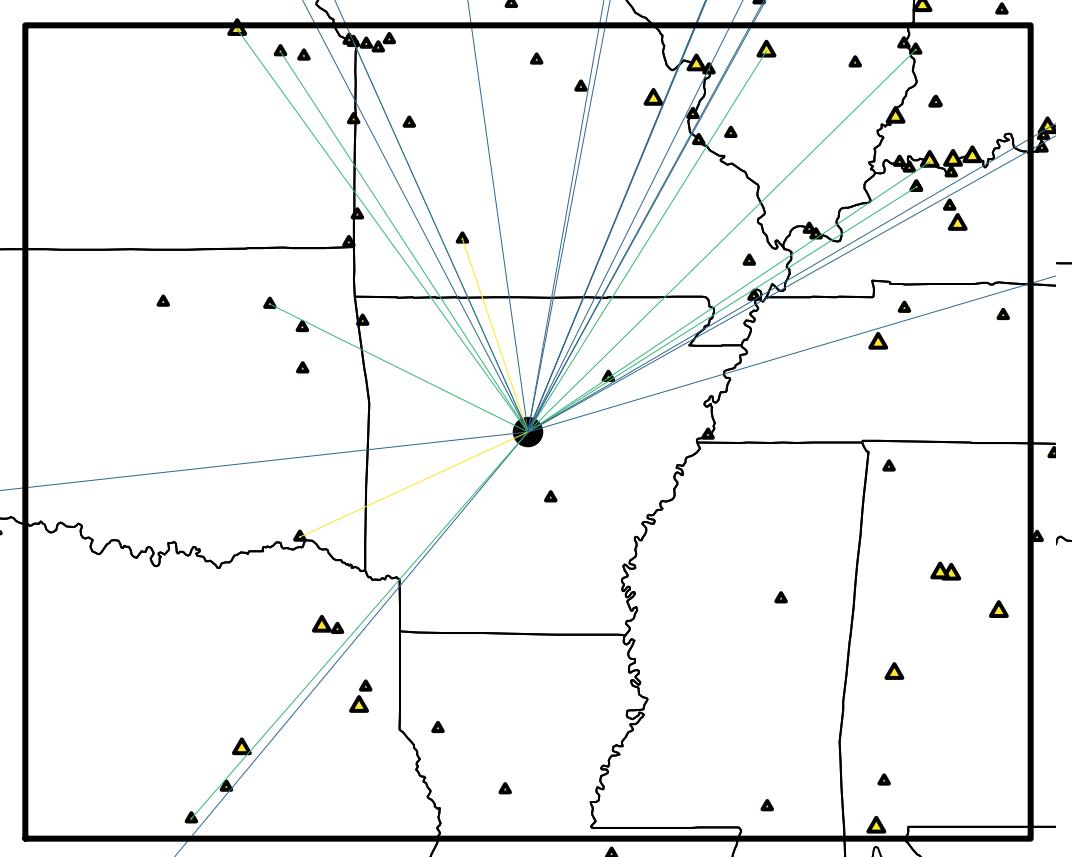


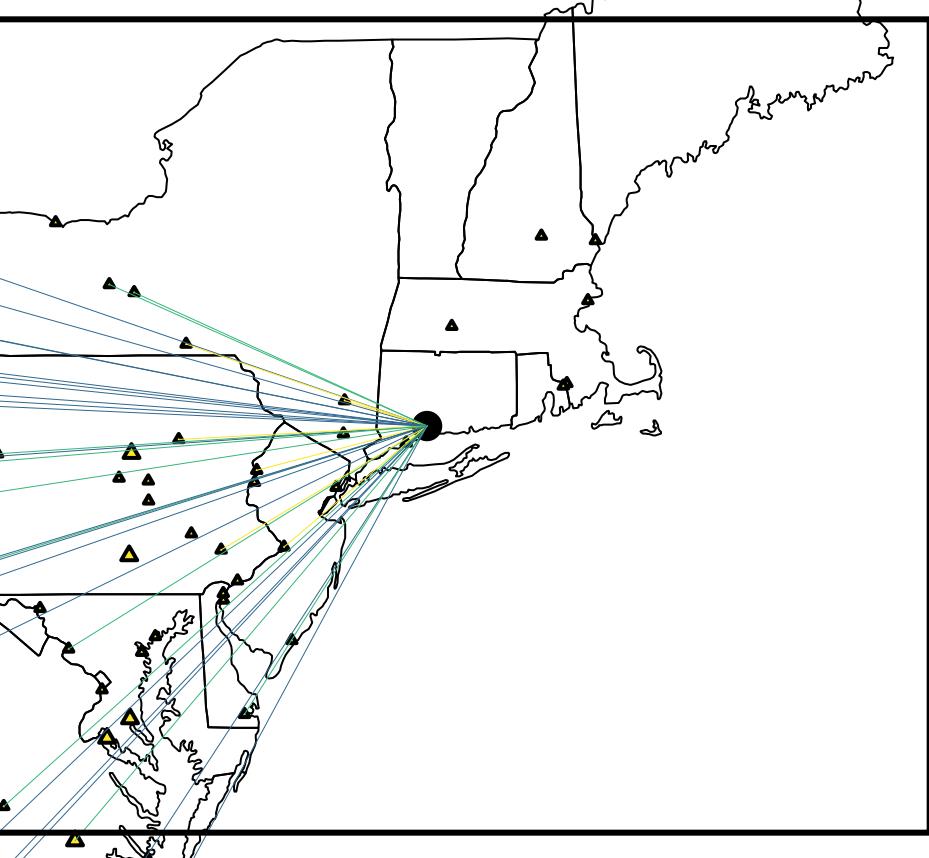
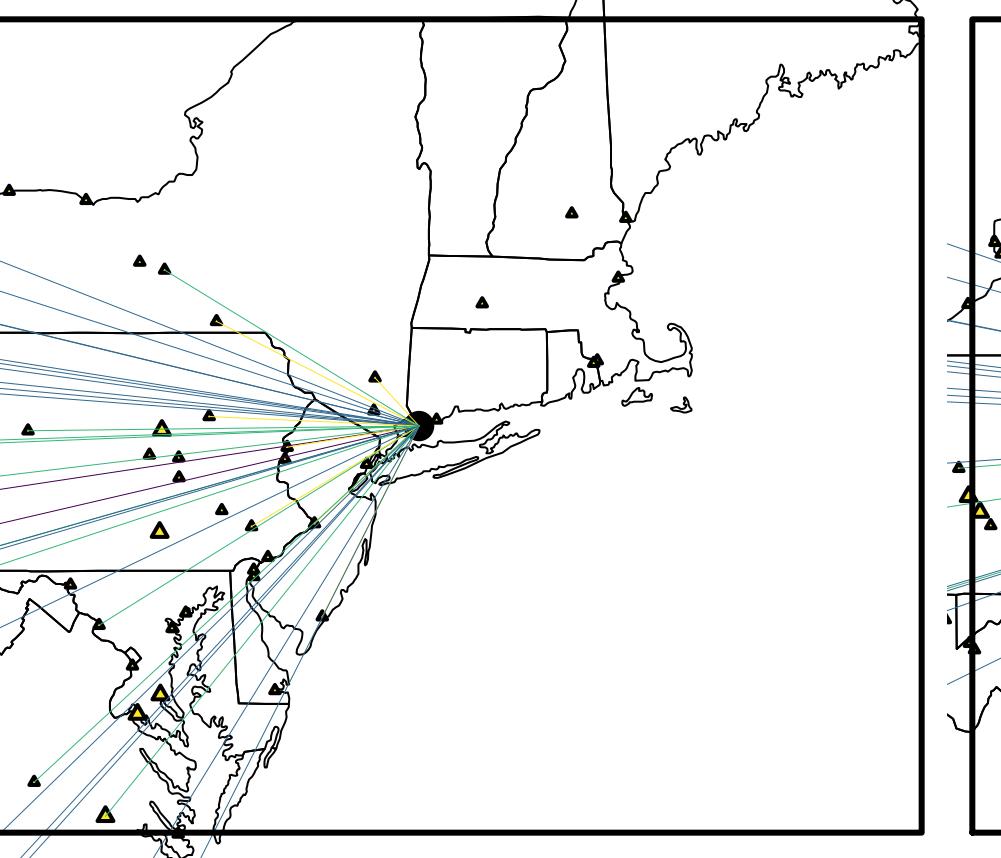
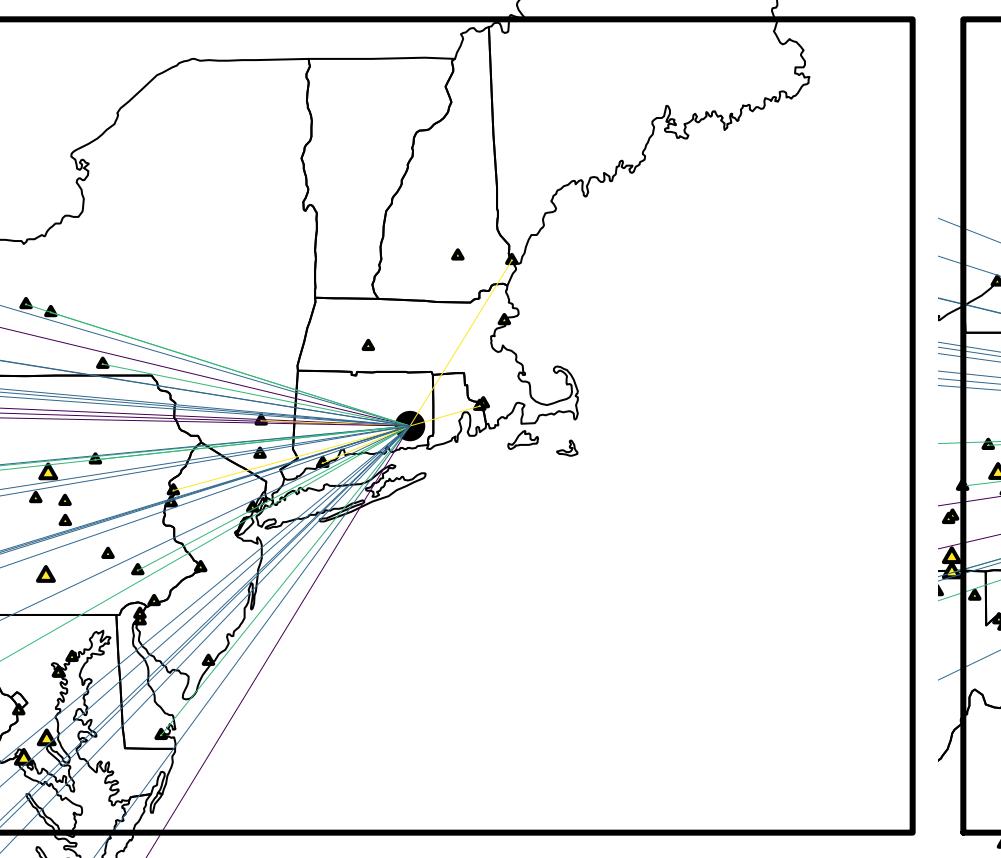
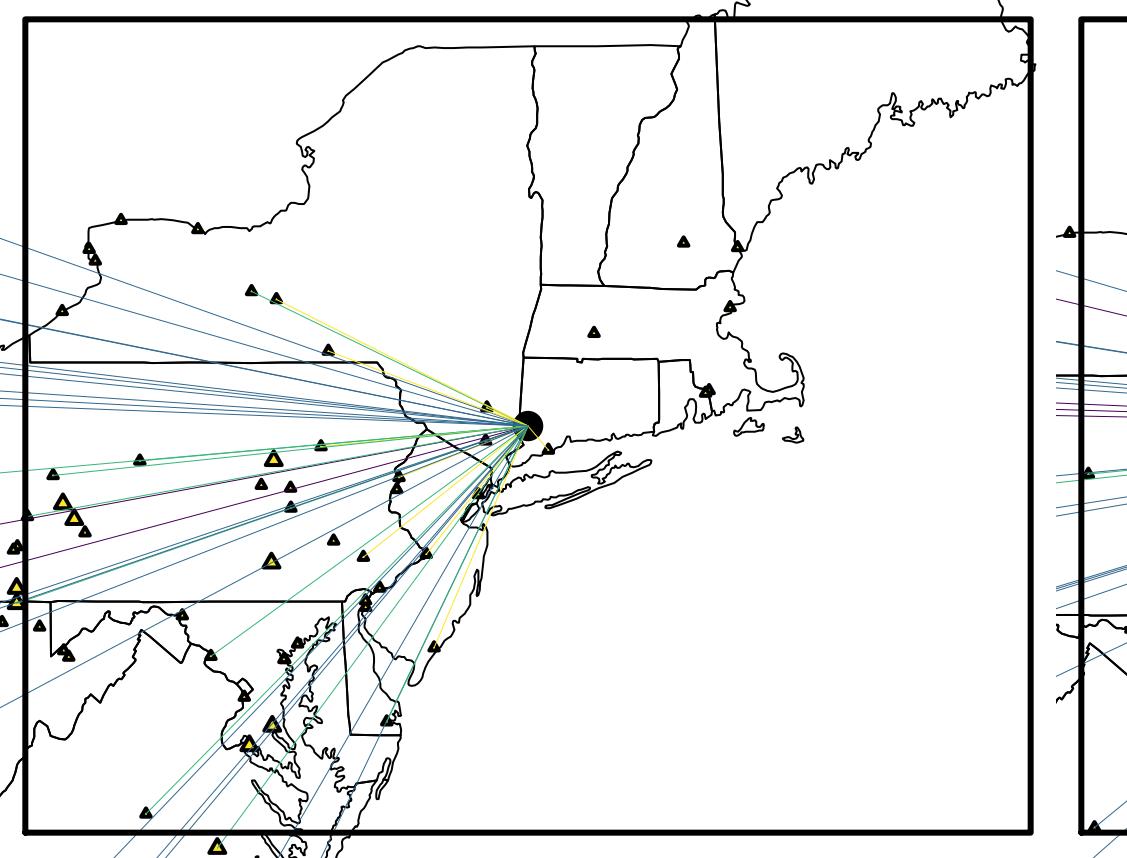
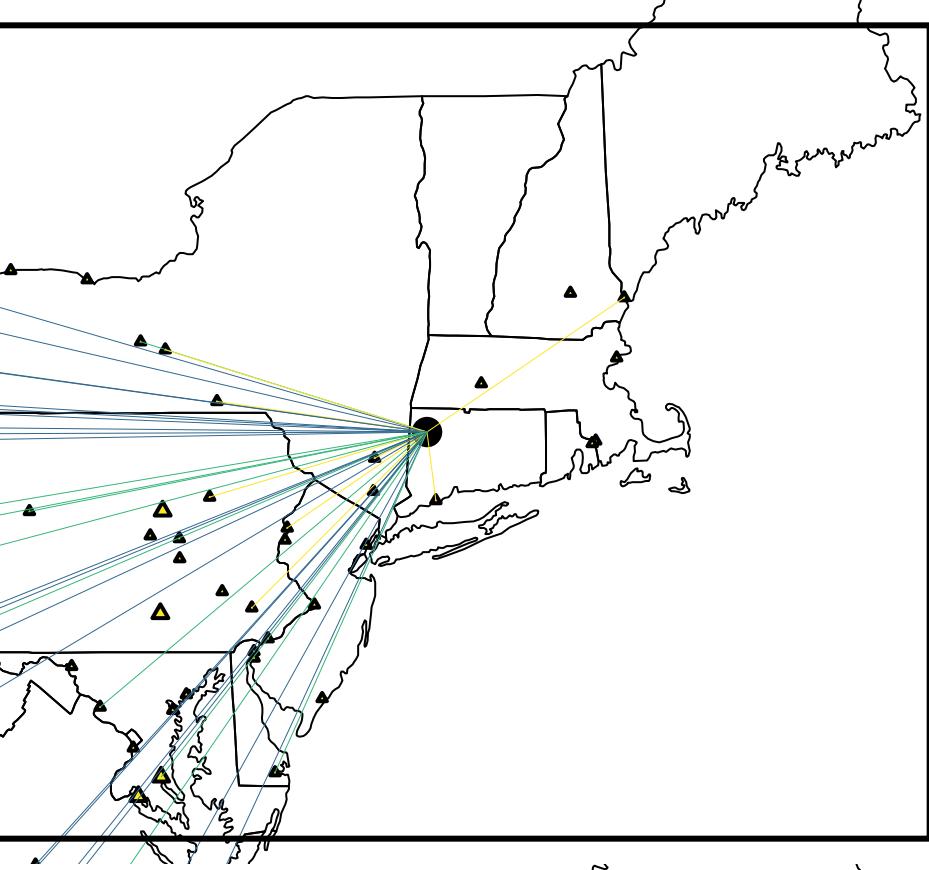
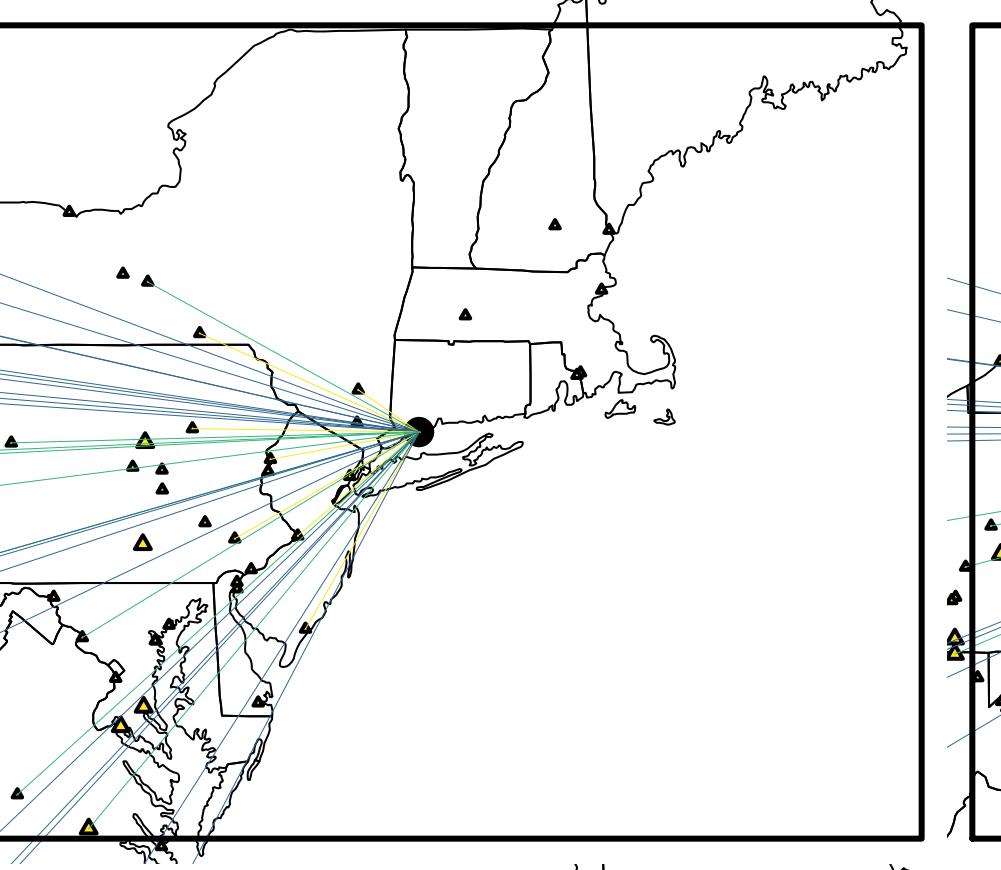
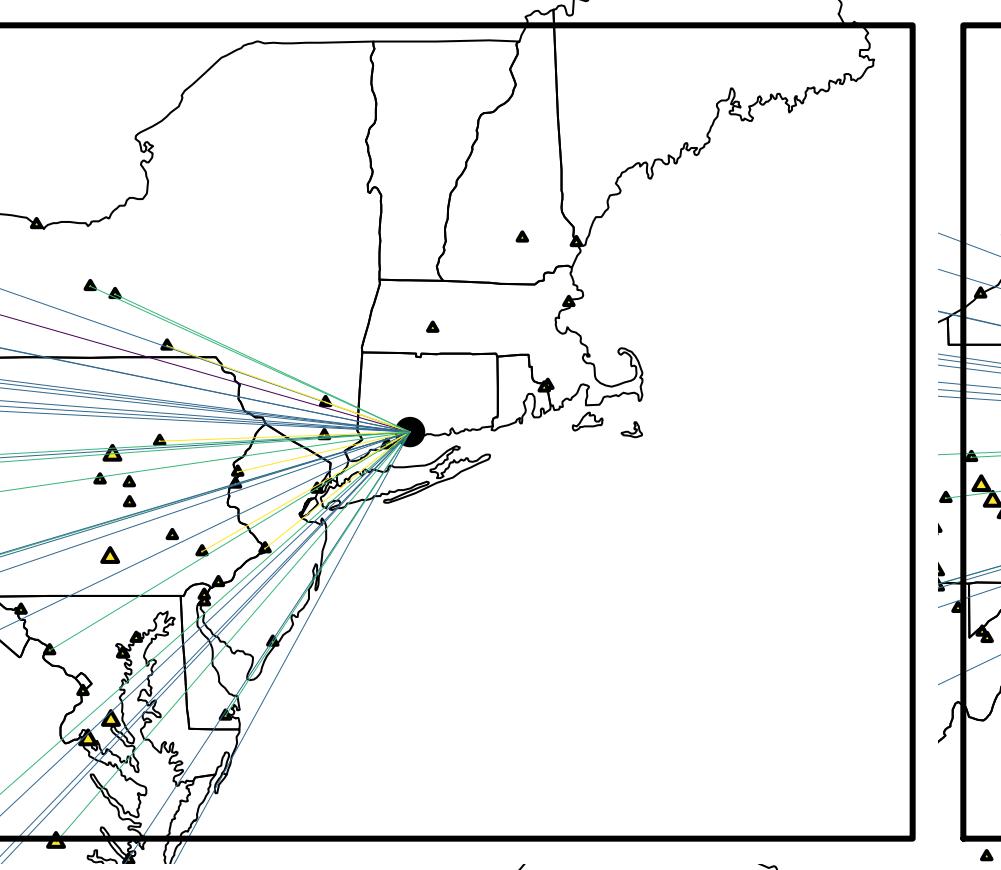
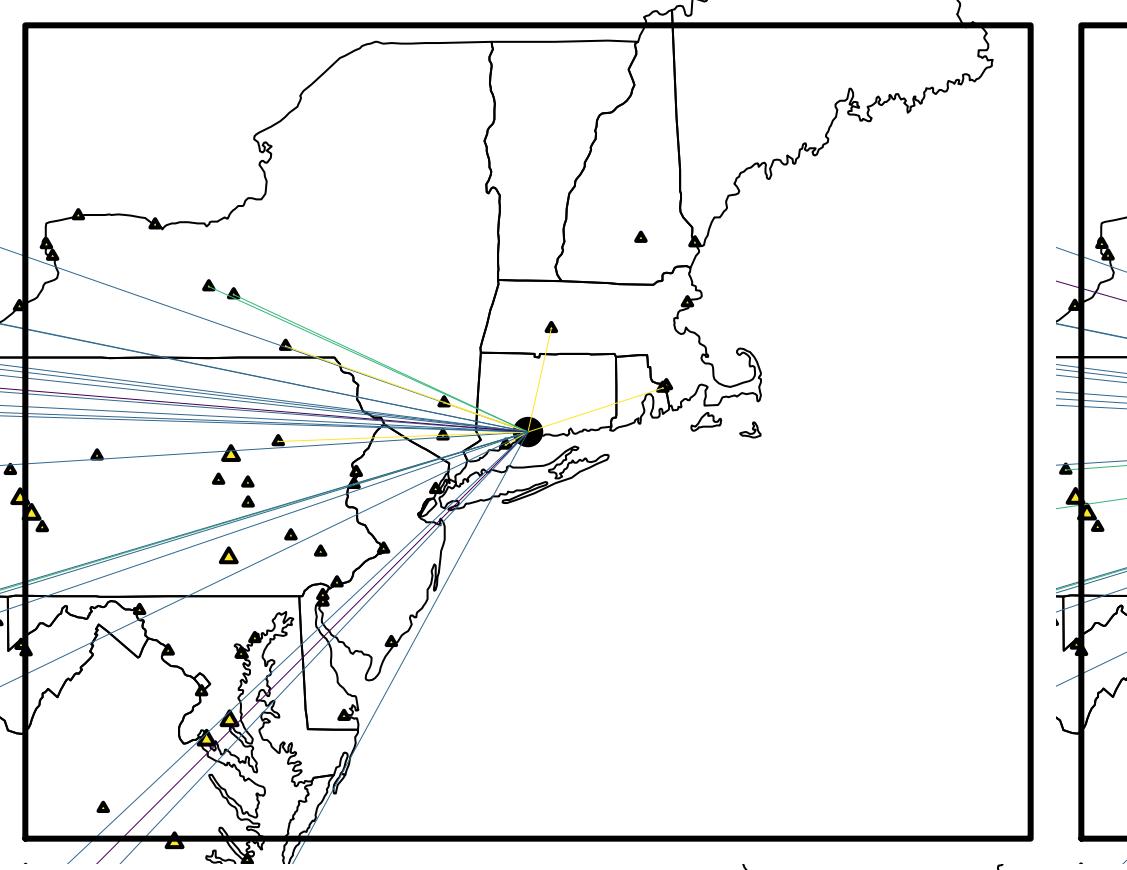
## Lag 3 edges

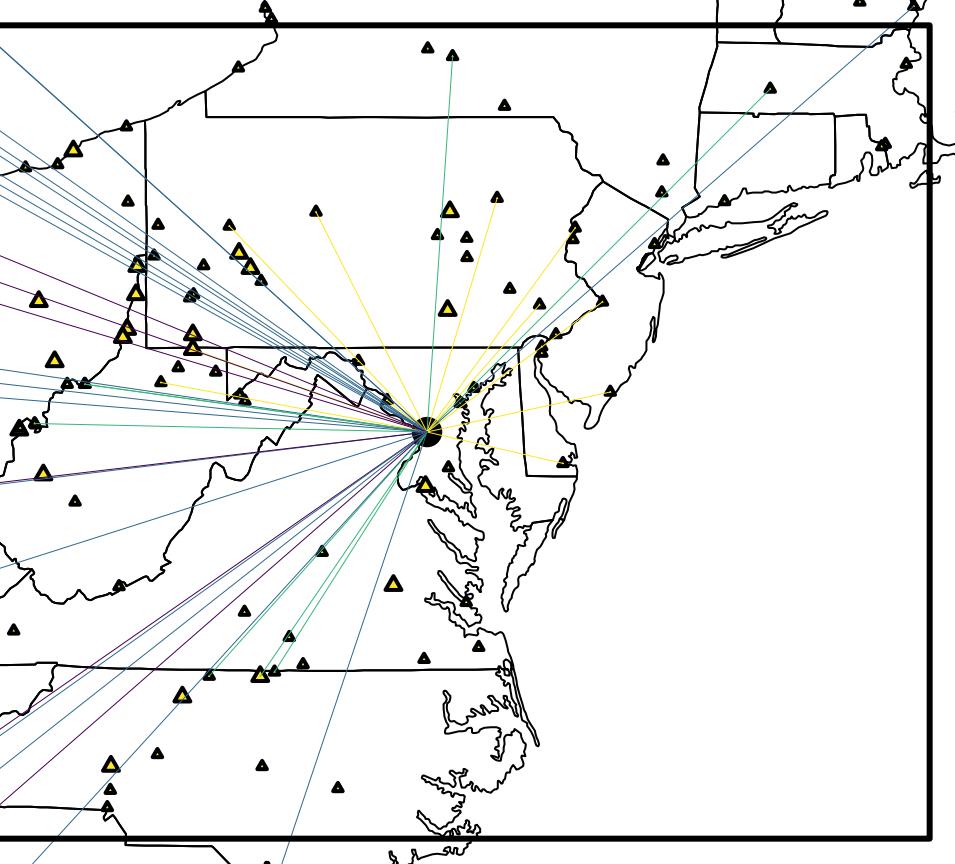
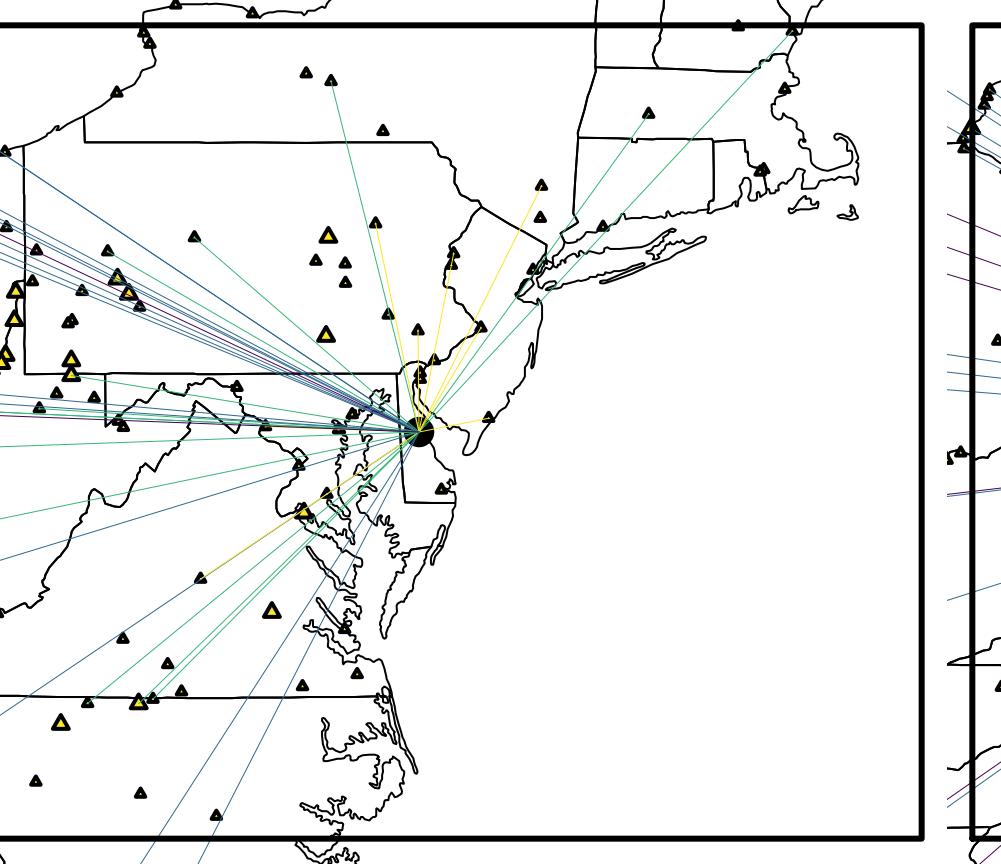
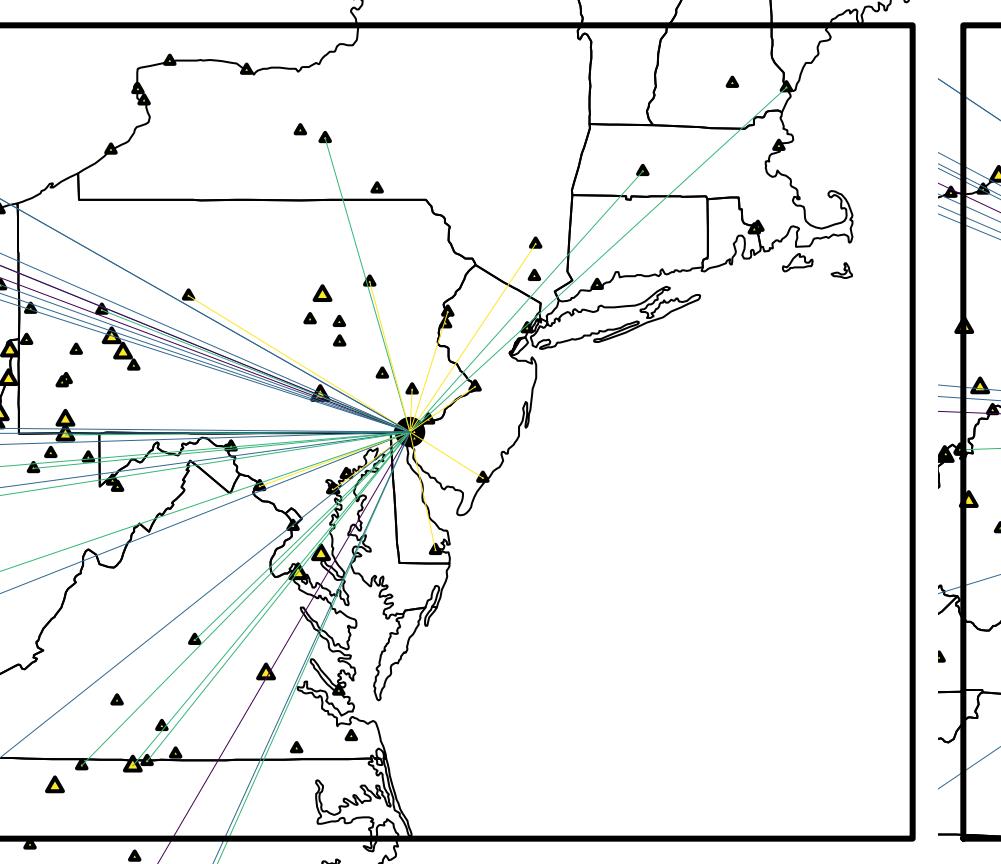
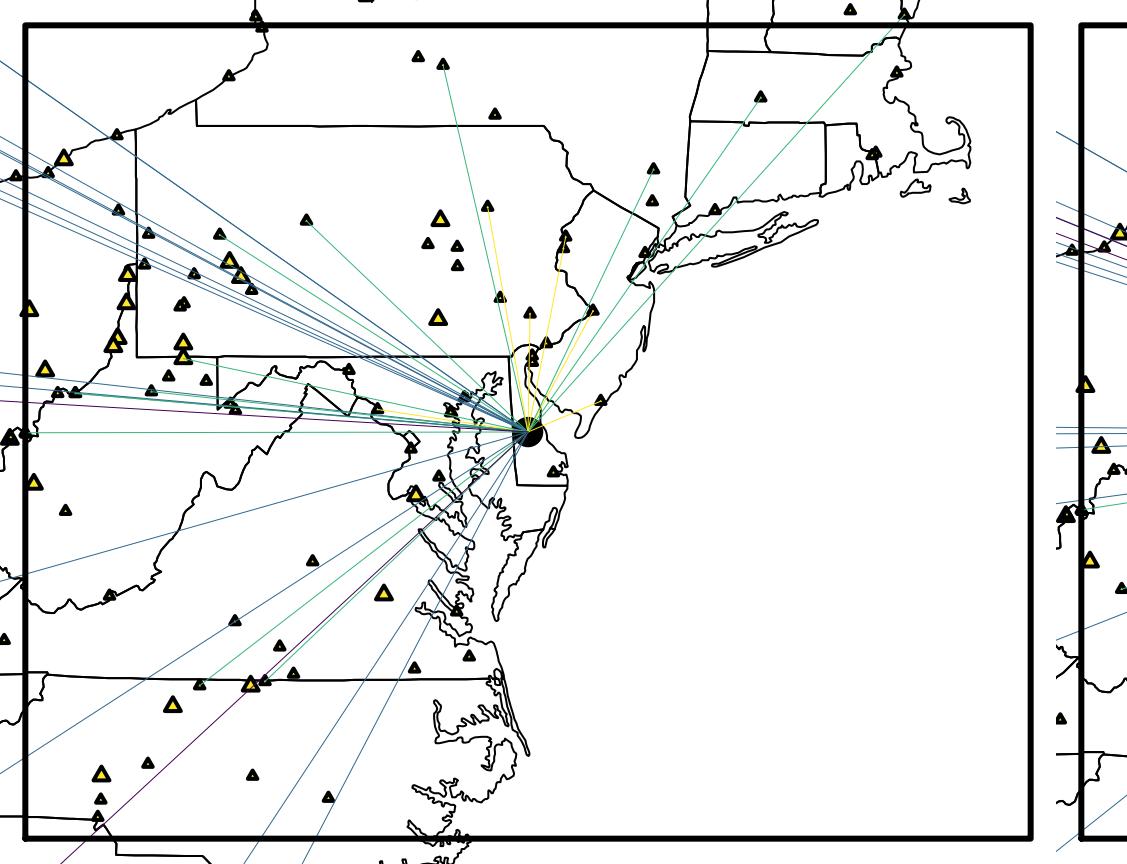
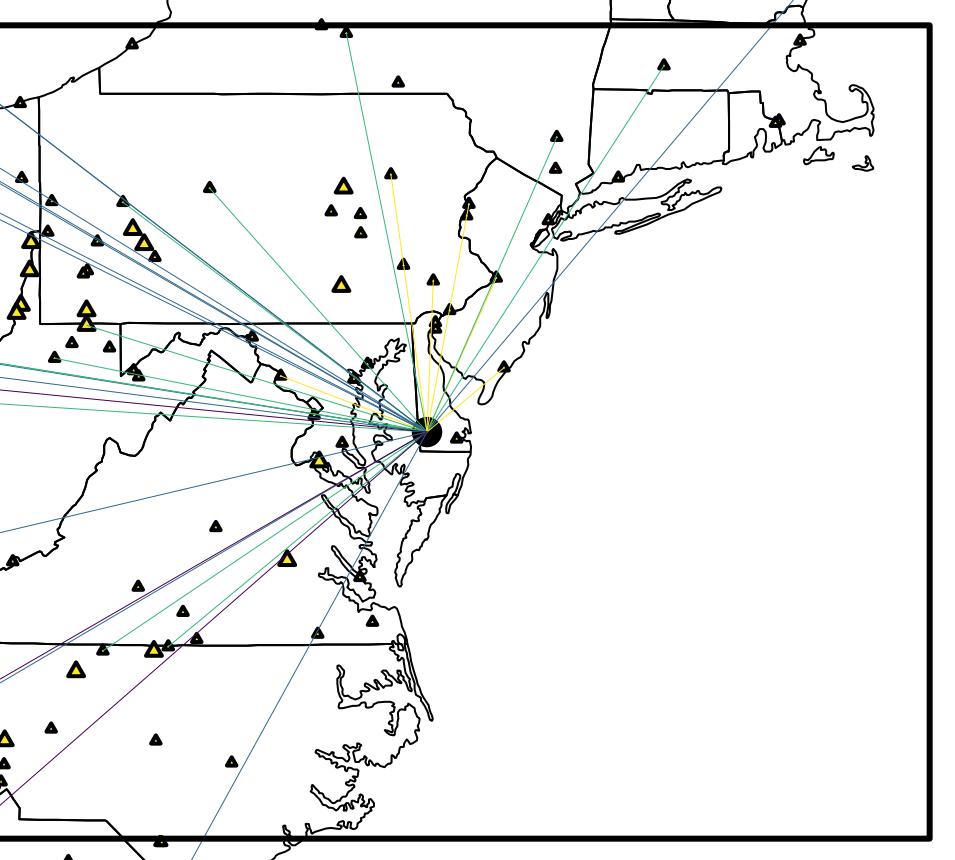
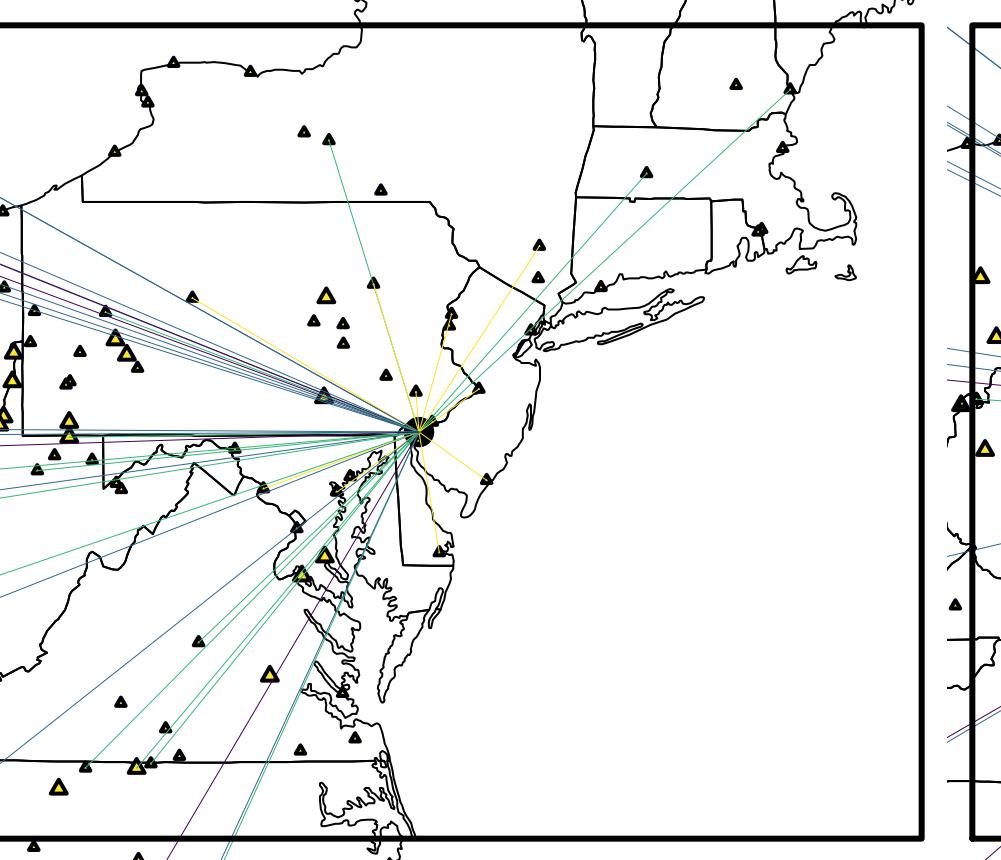
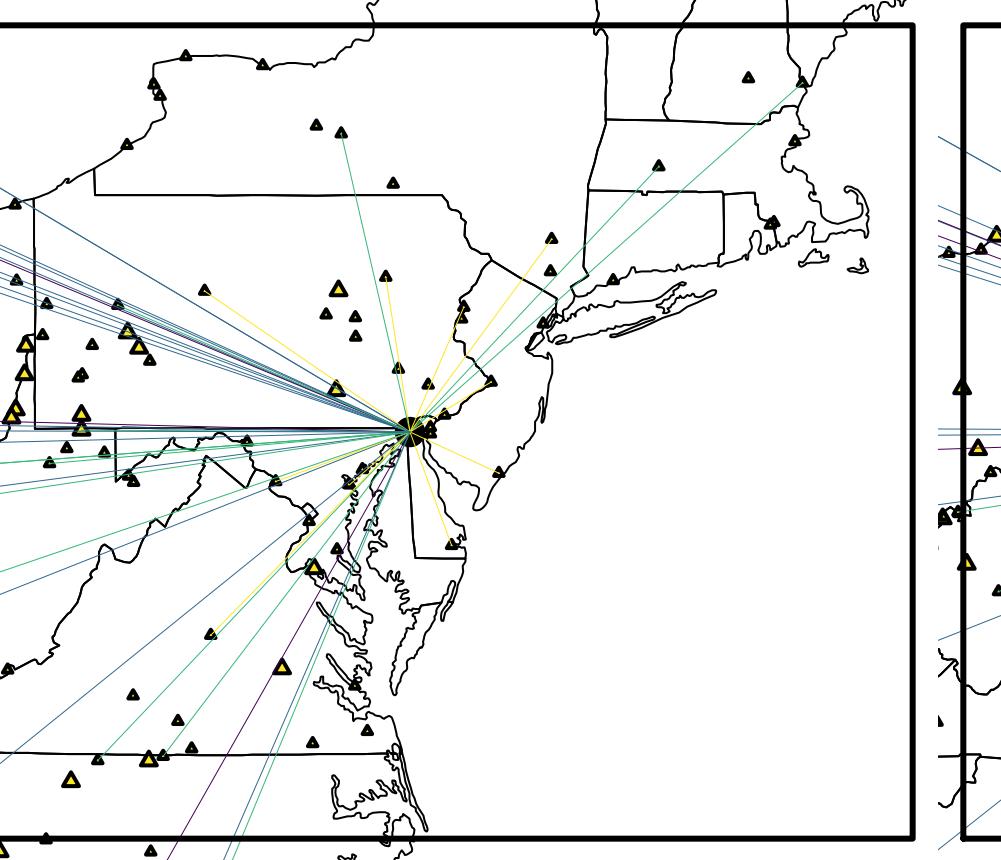
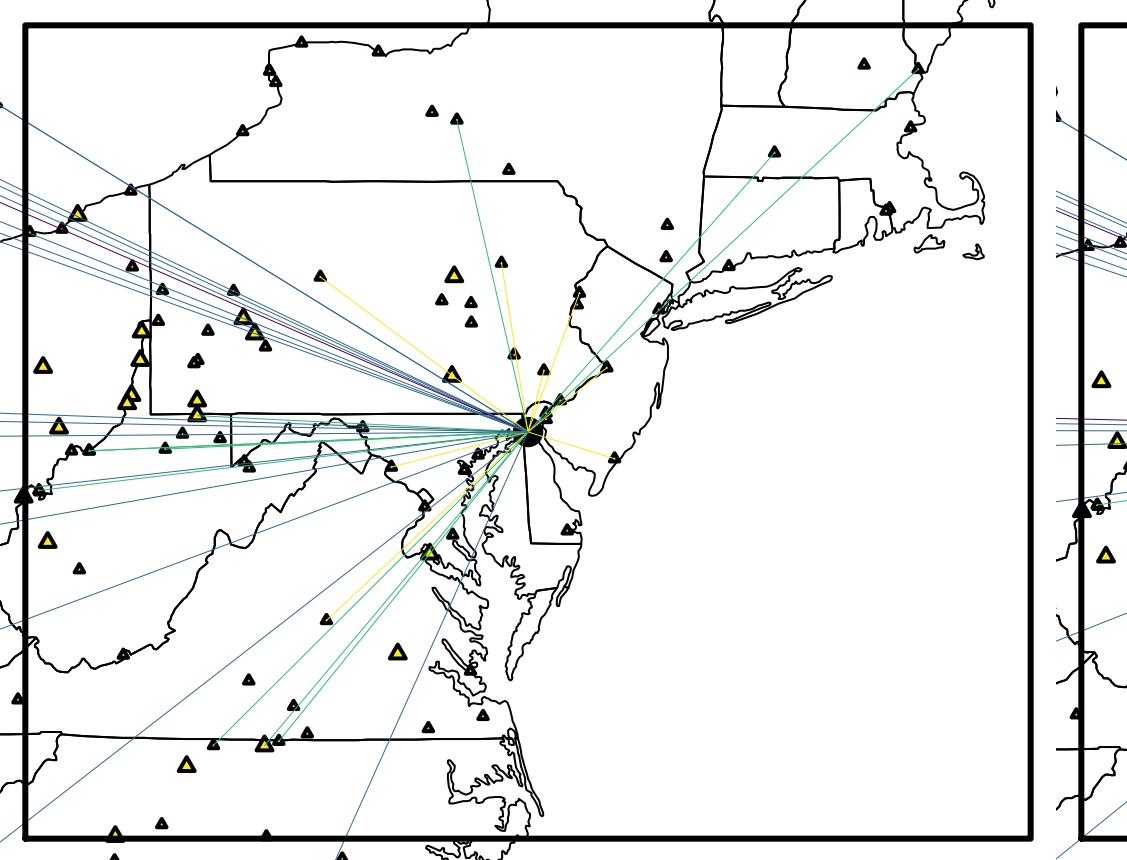


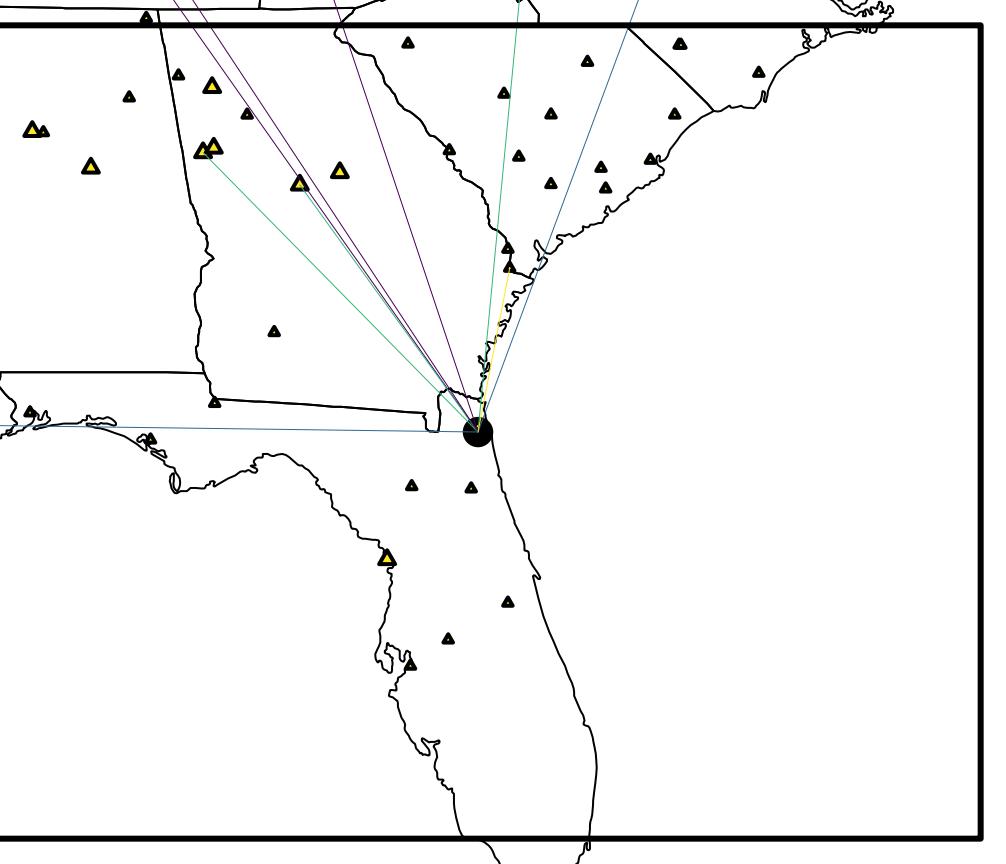
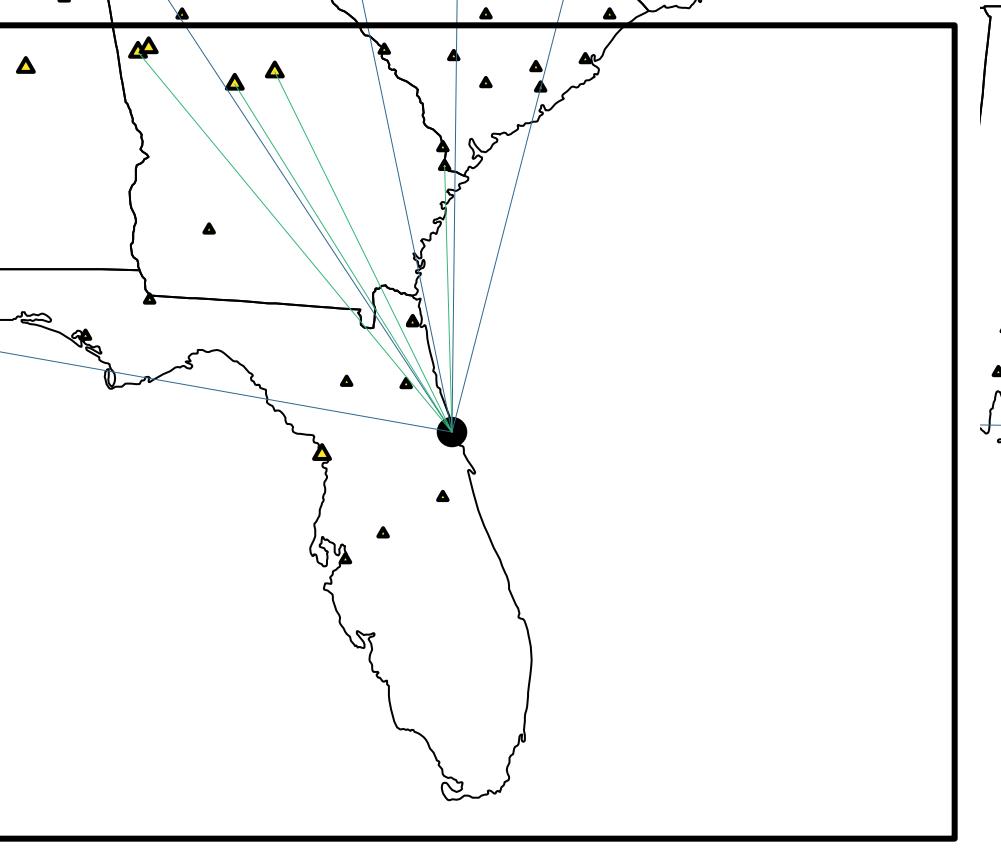
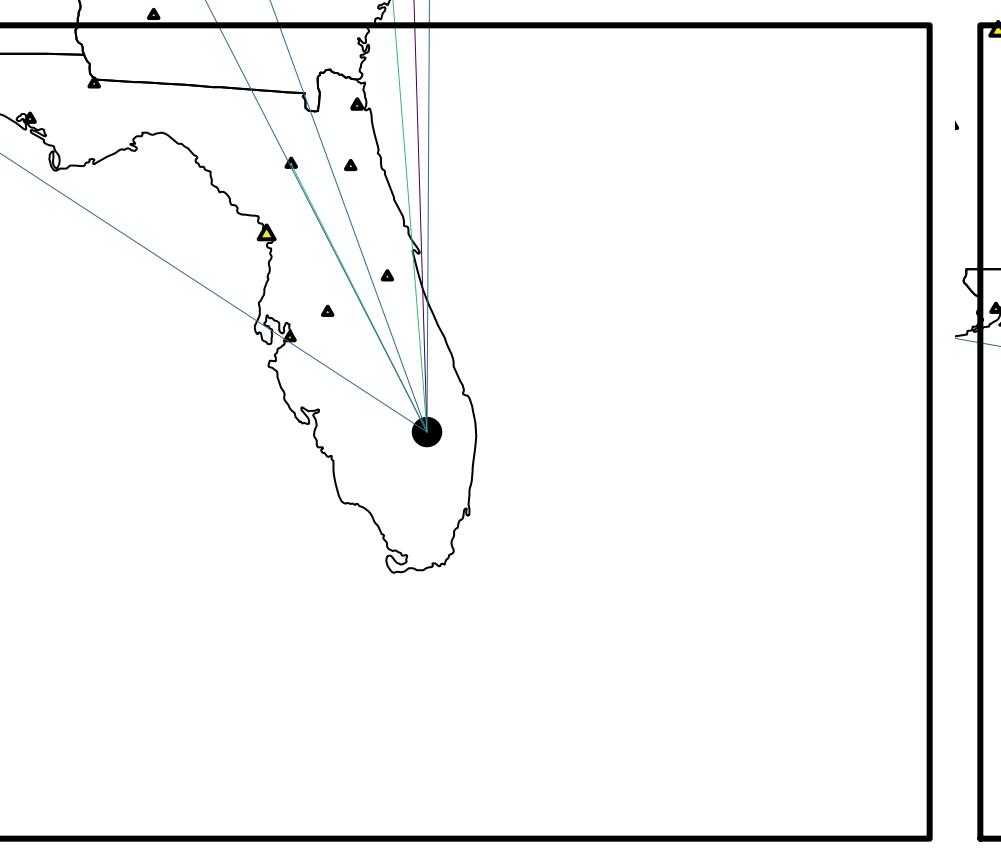
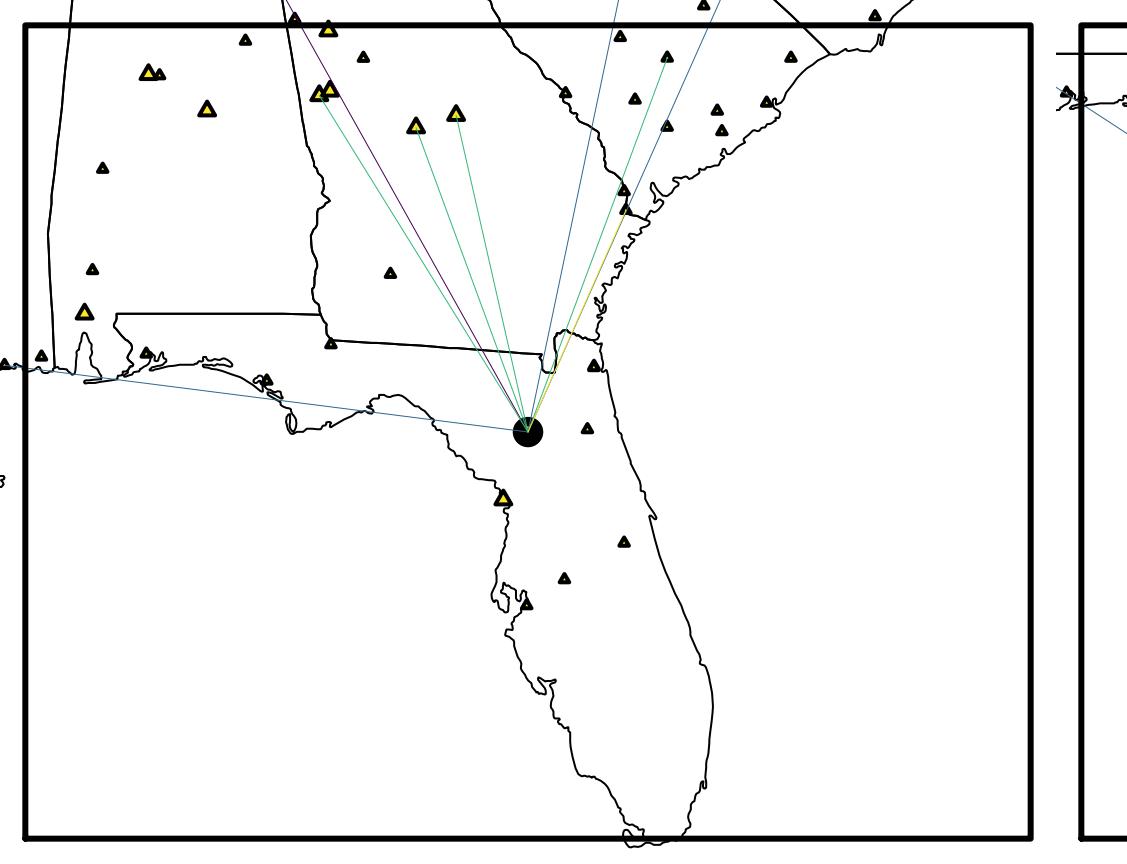
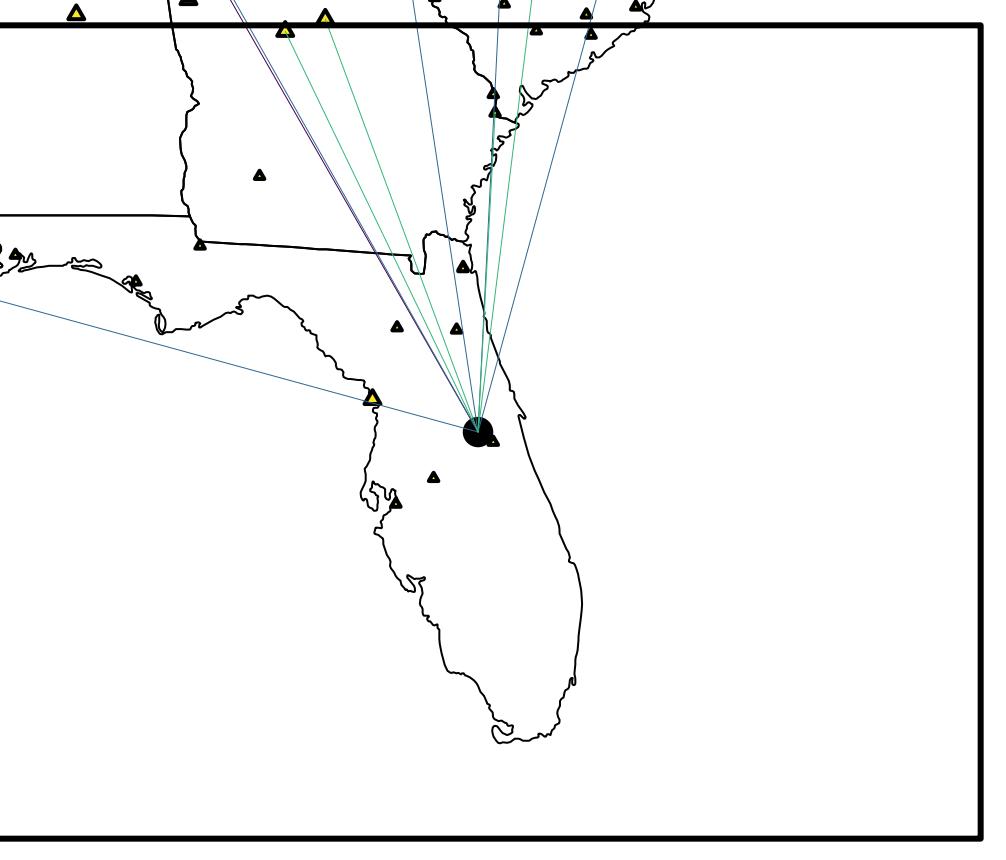
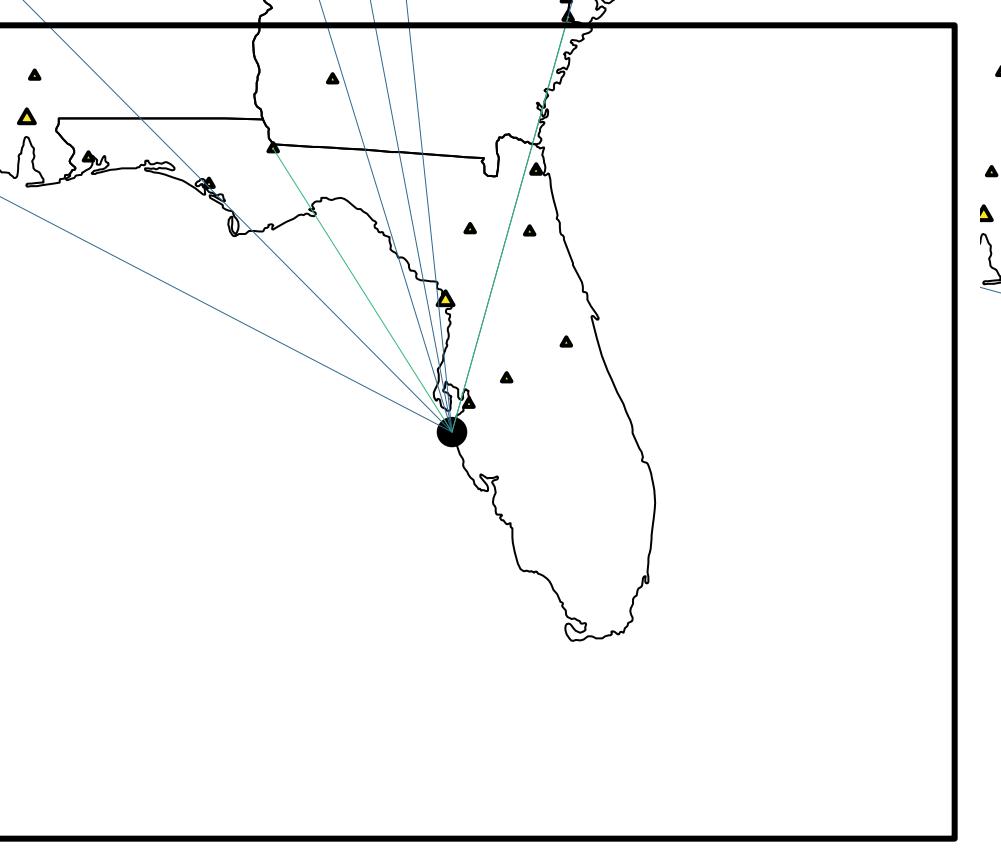
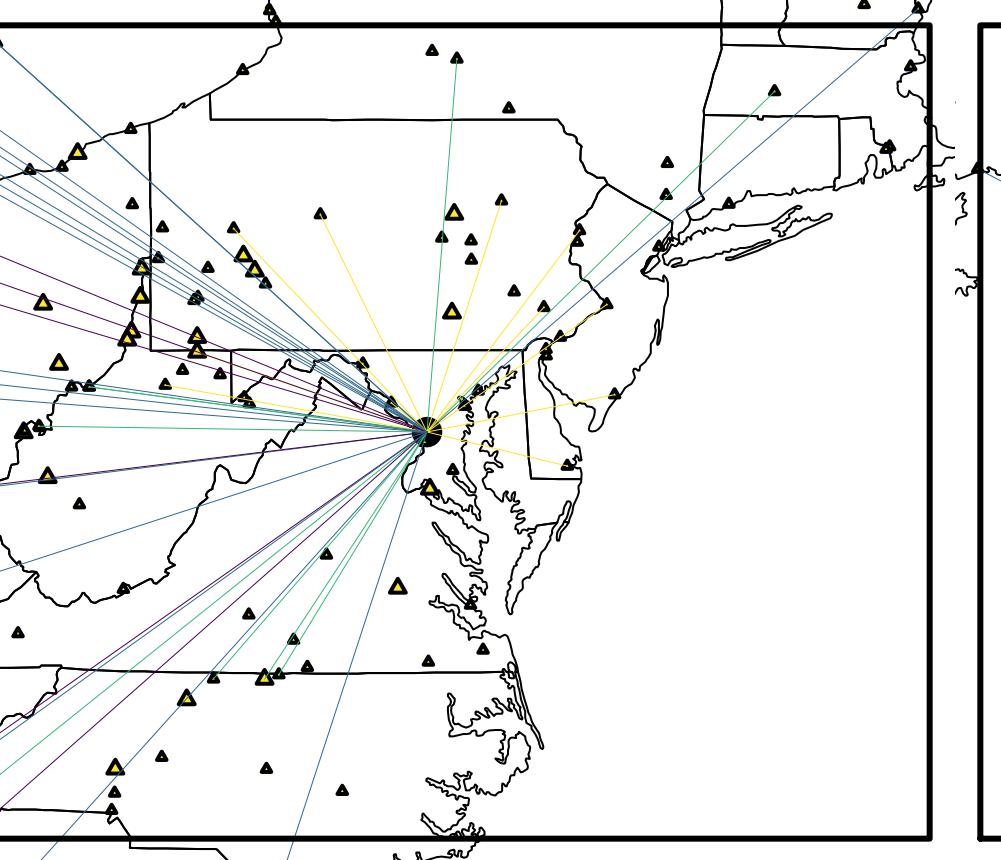
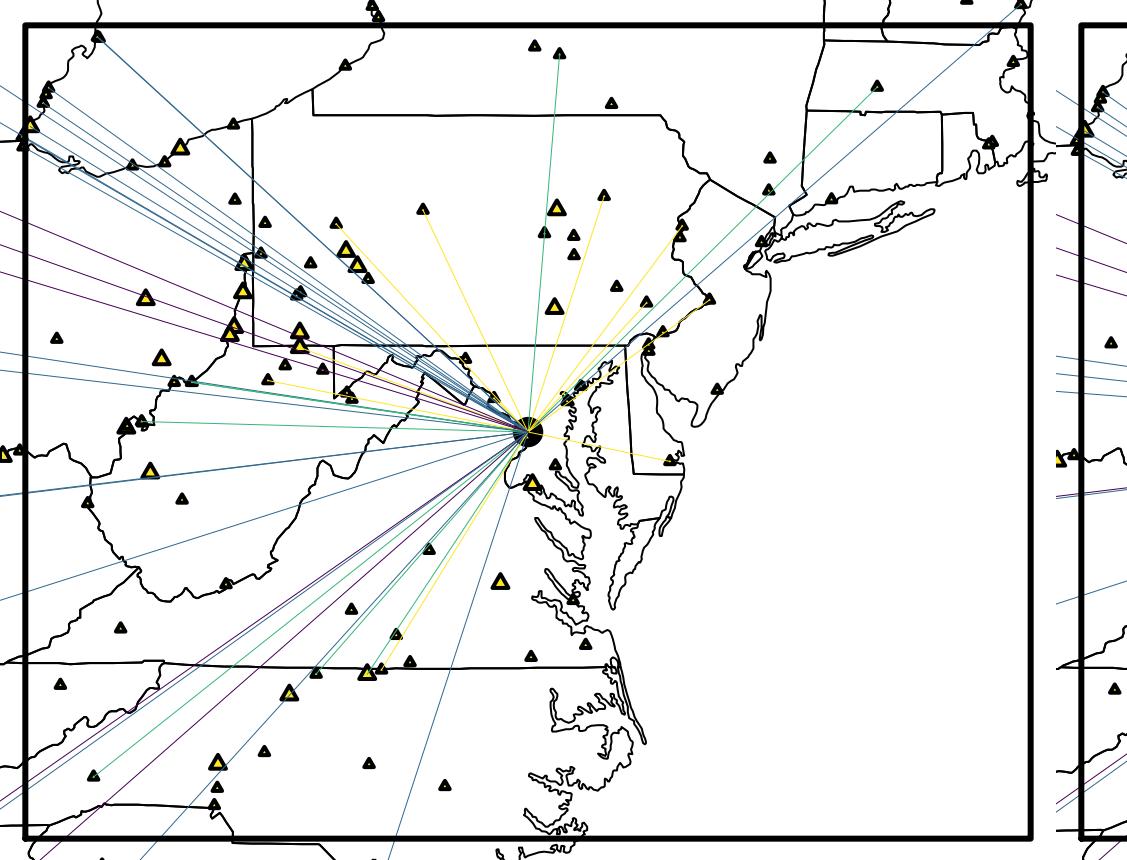


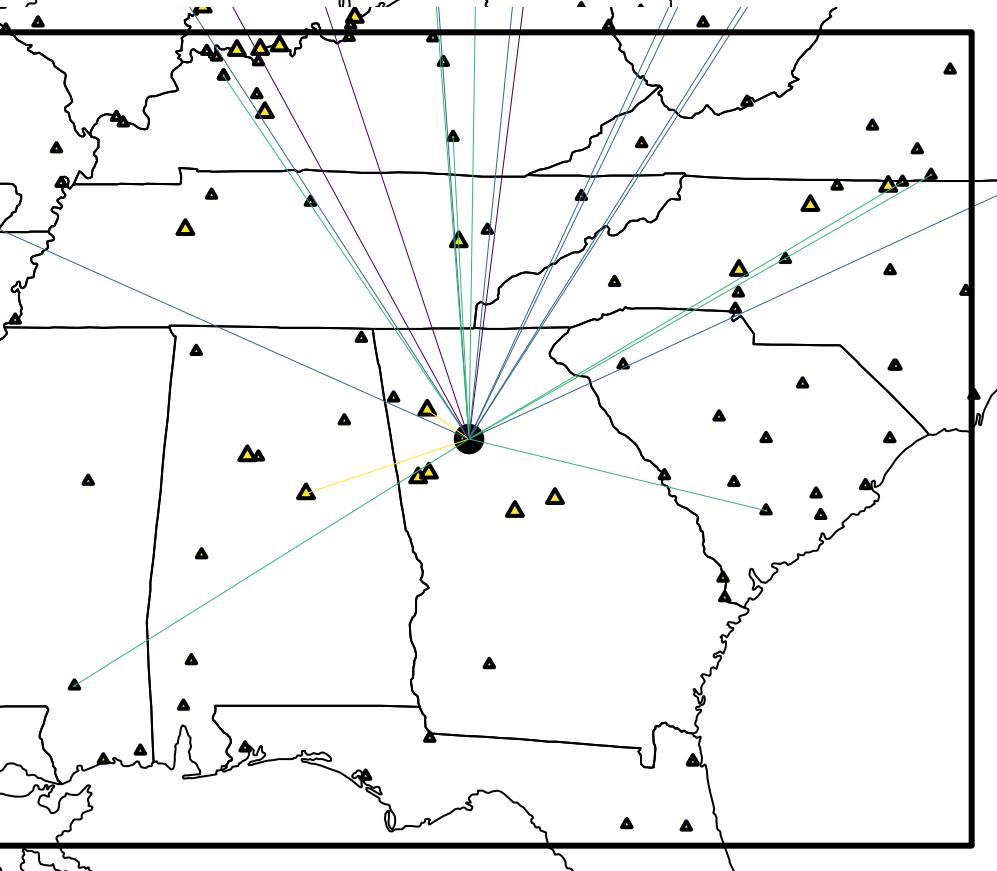
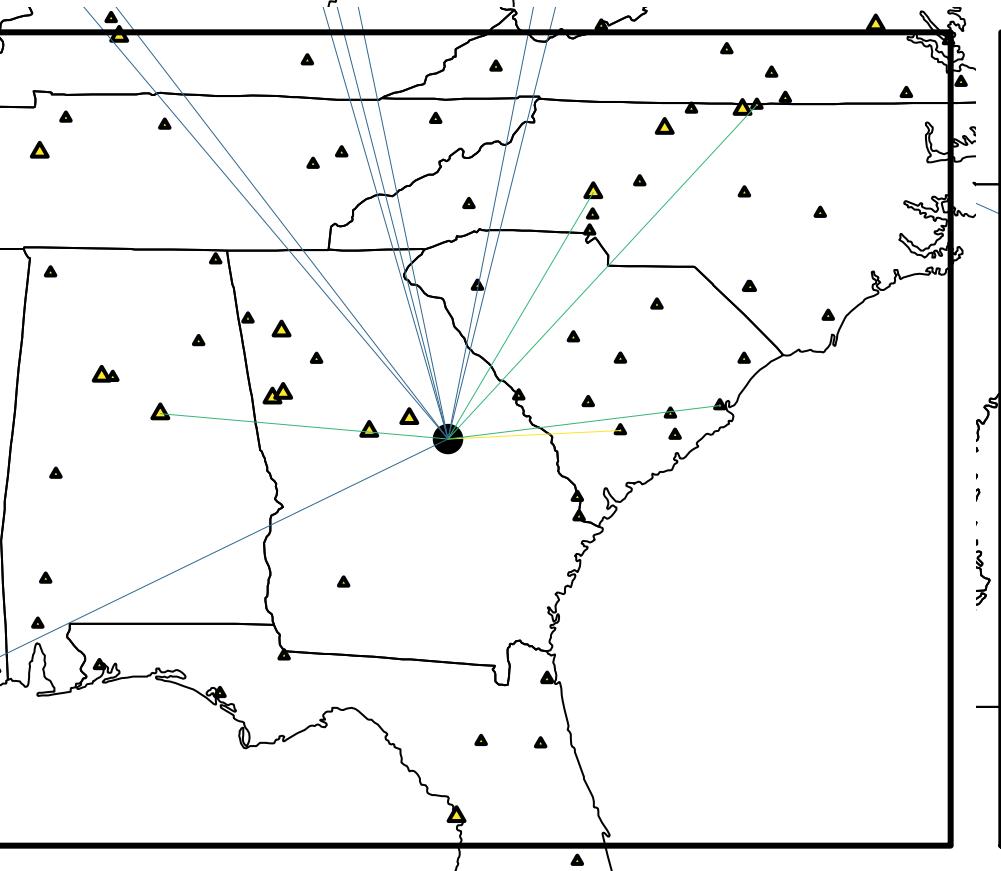
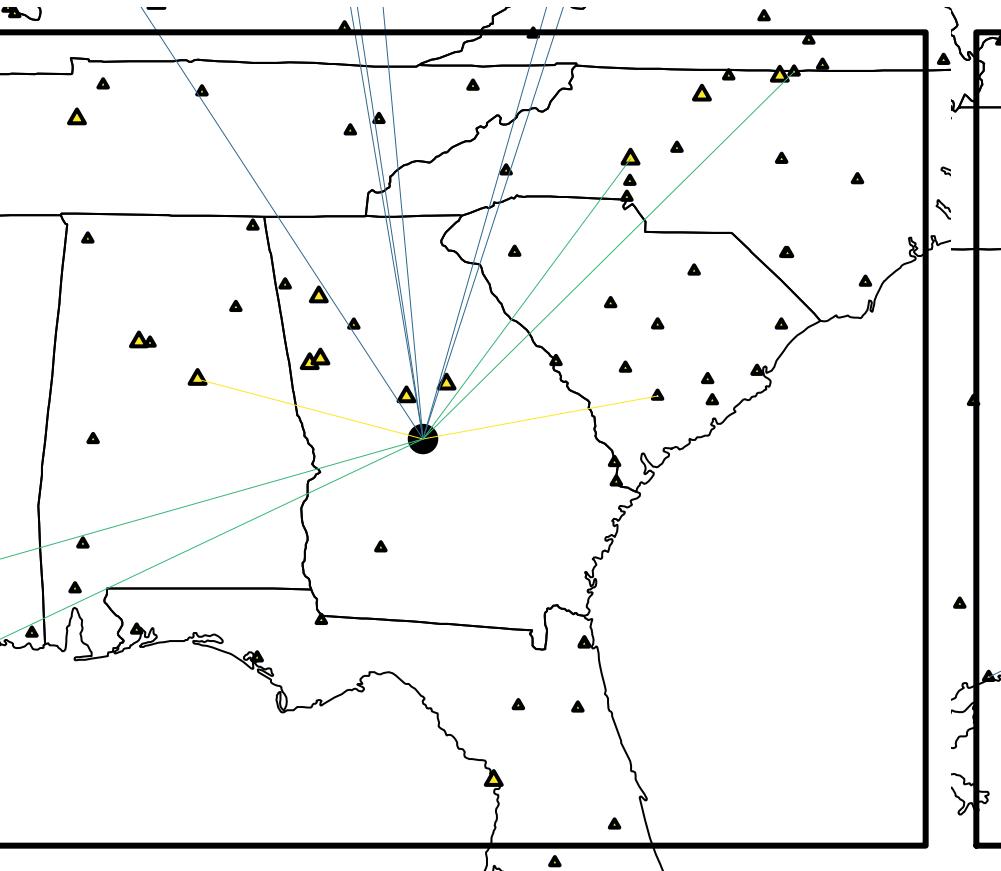
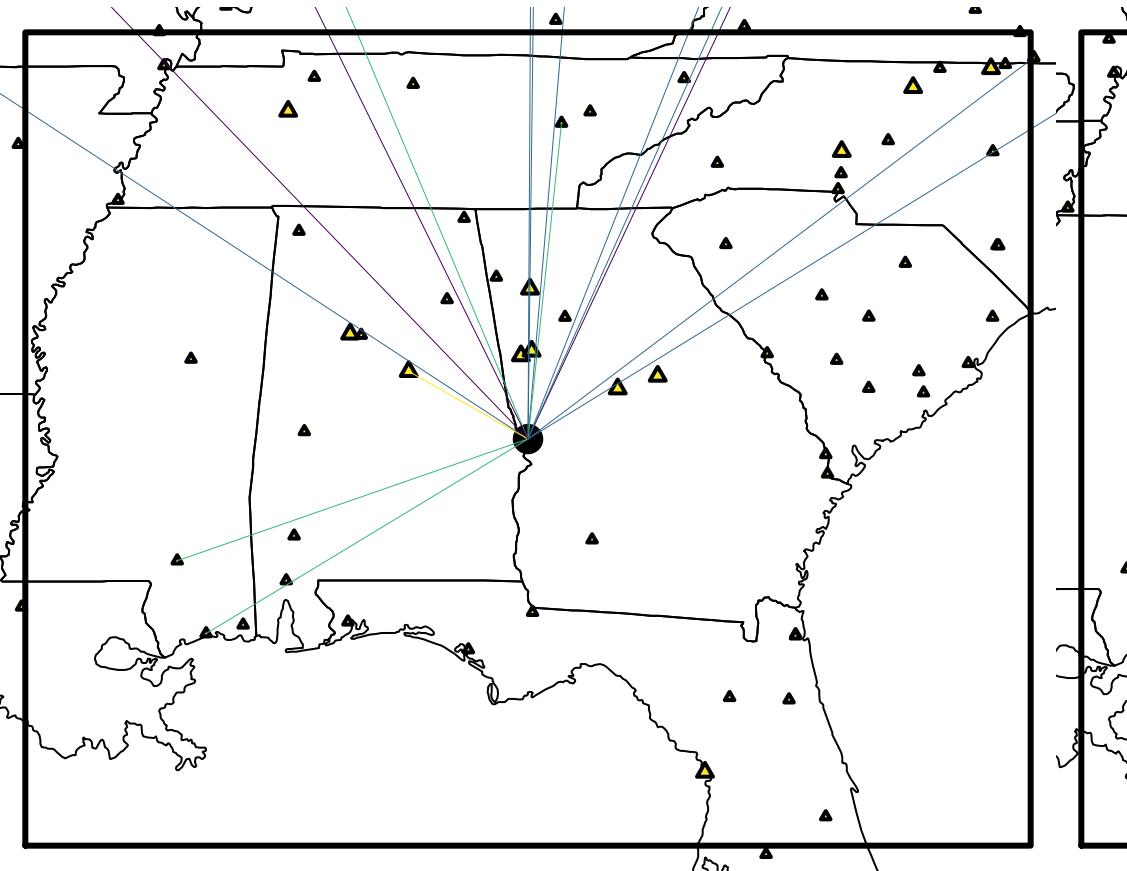
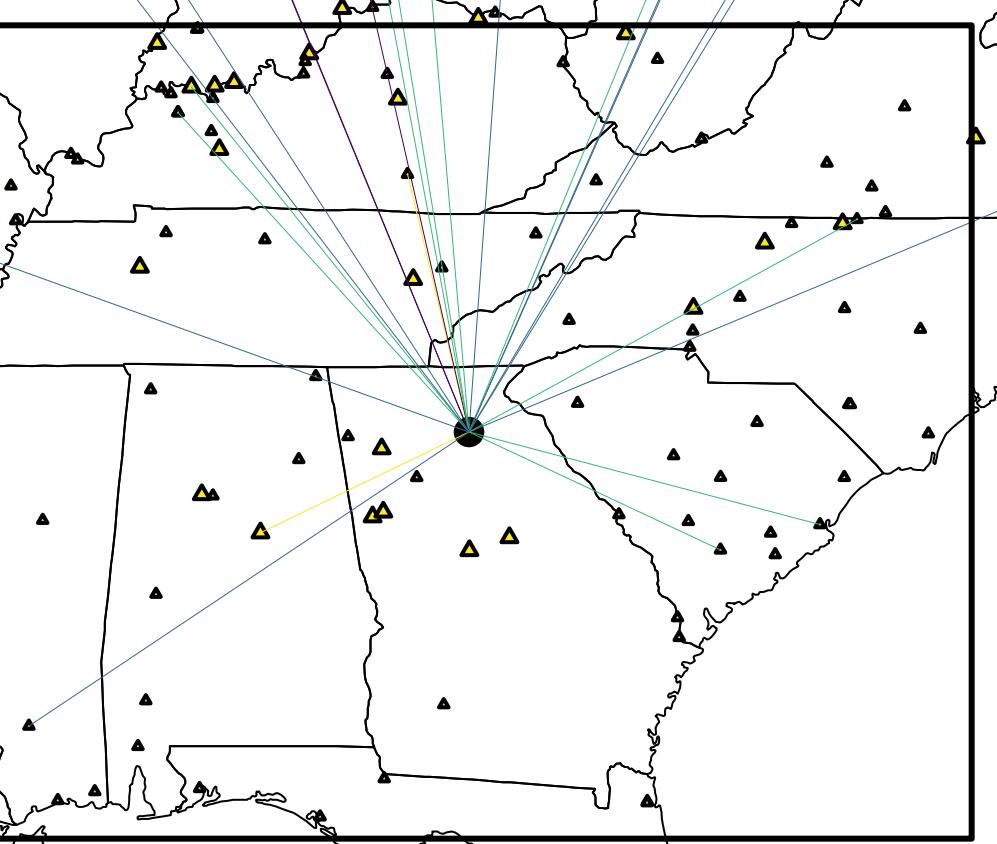
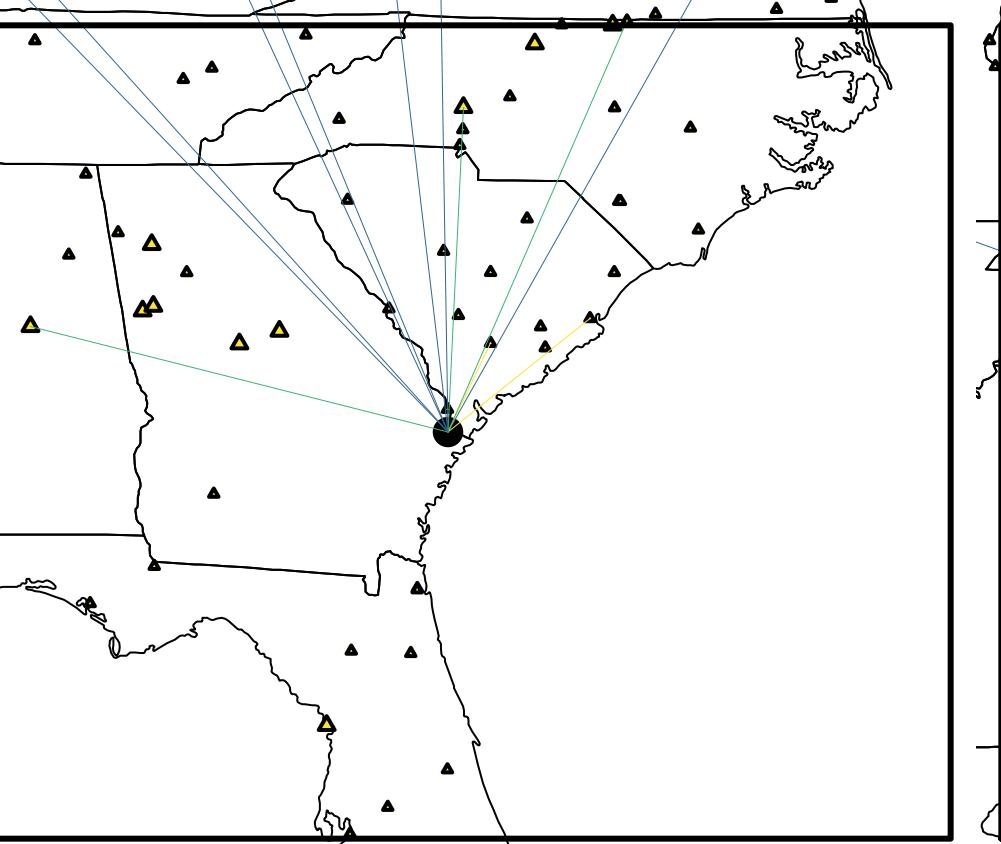
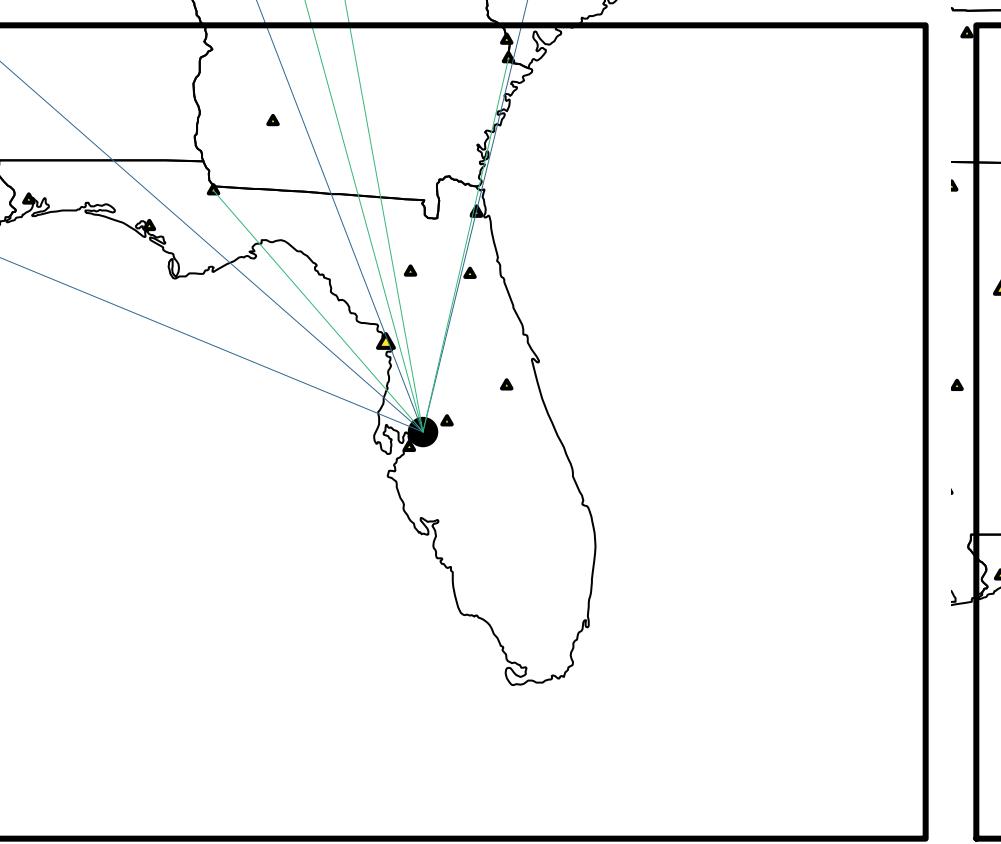
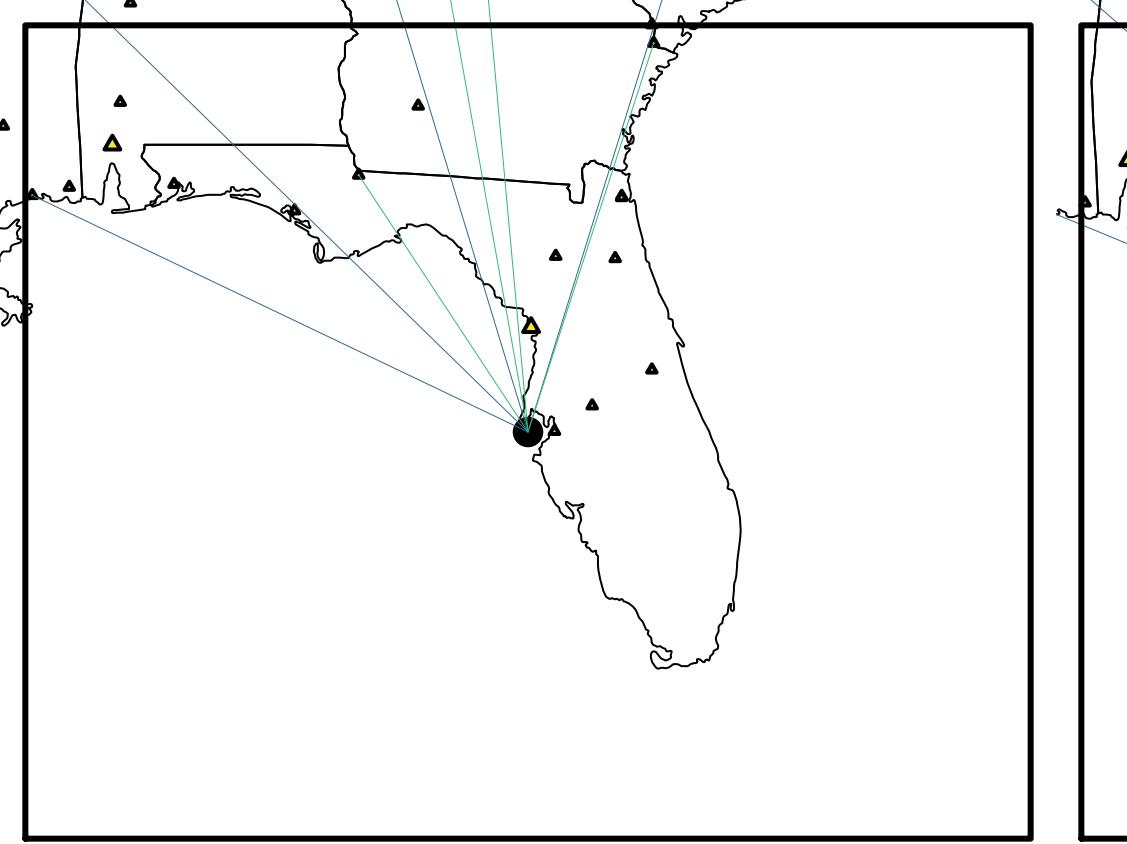


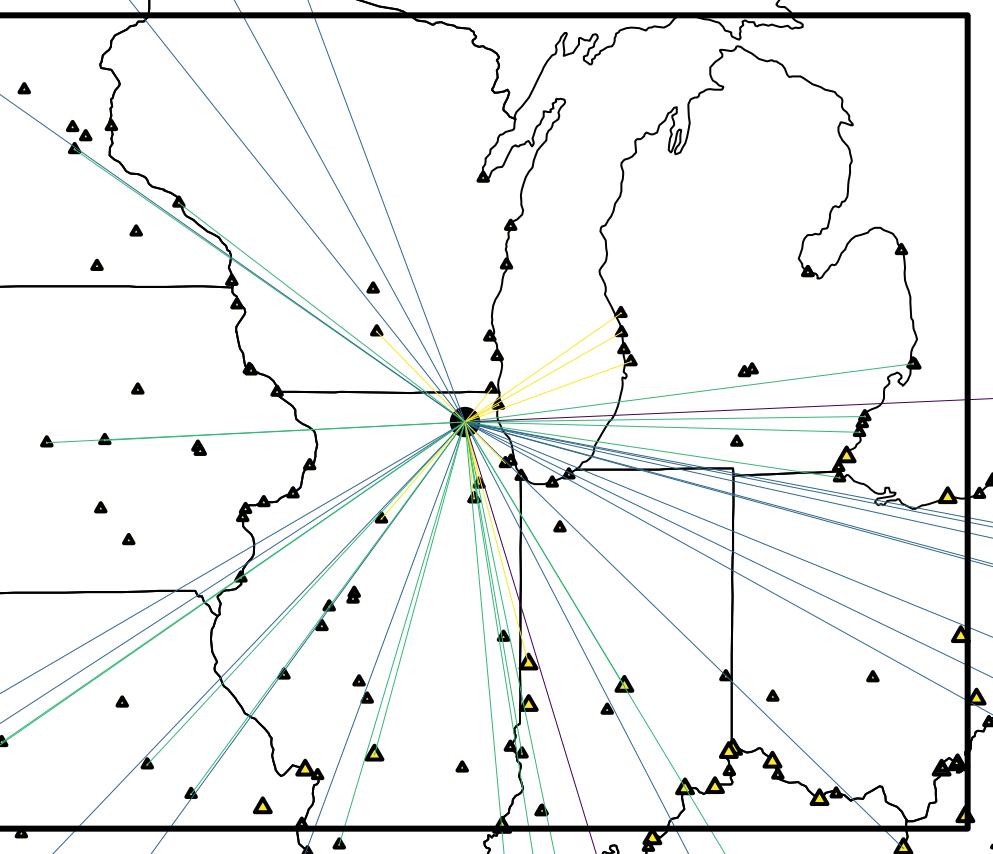
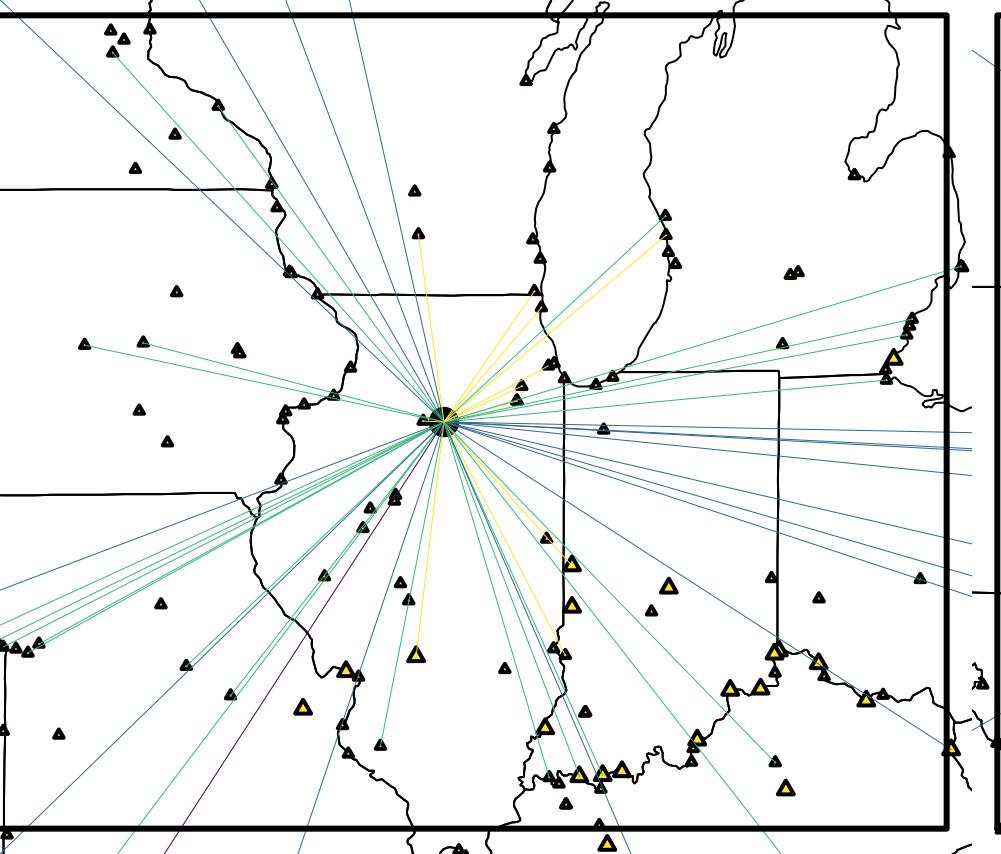
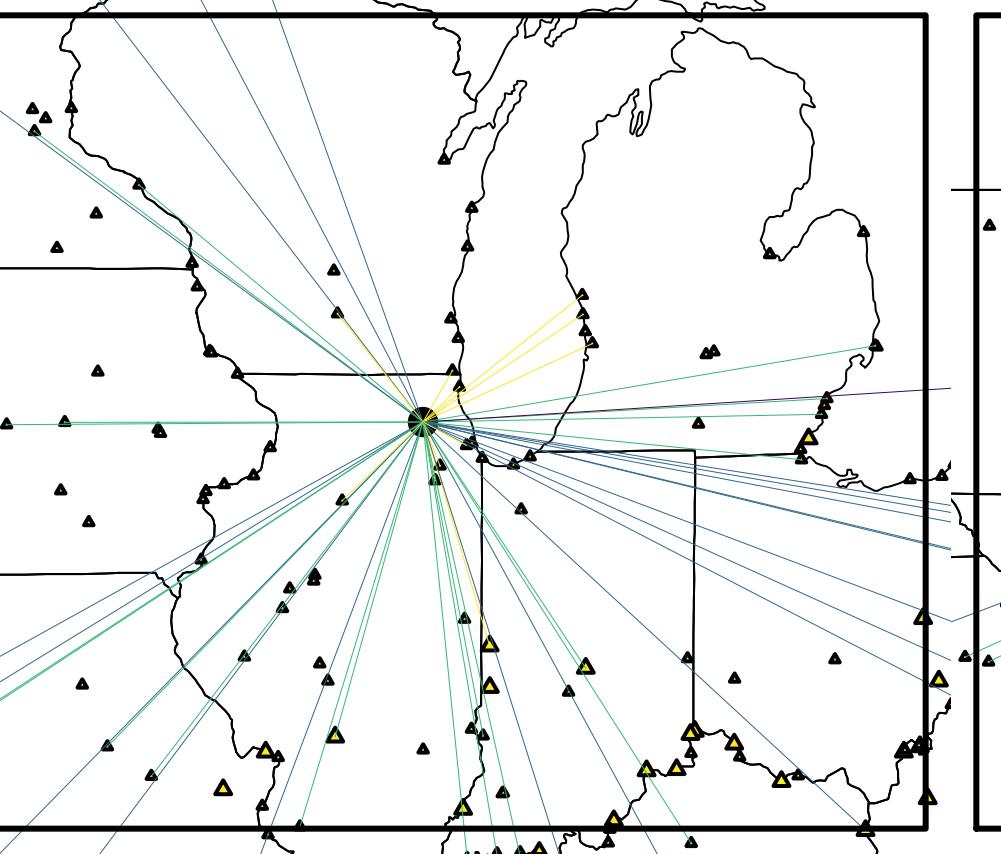
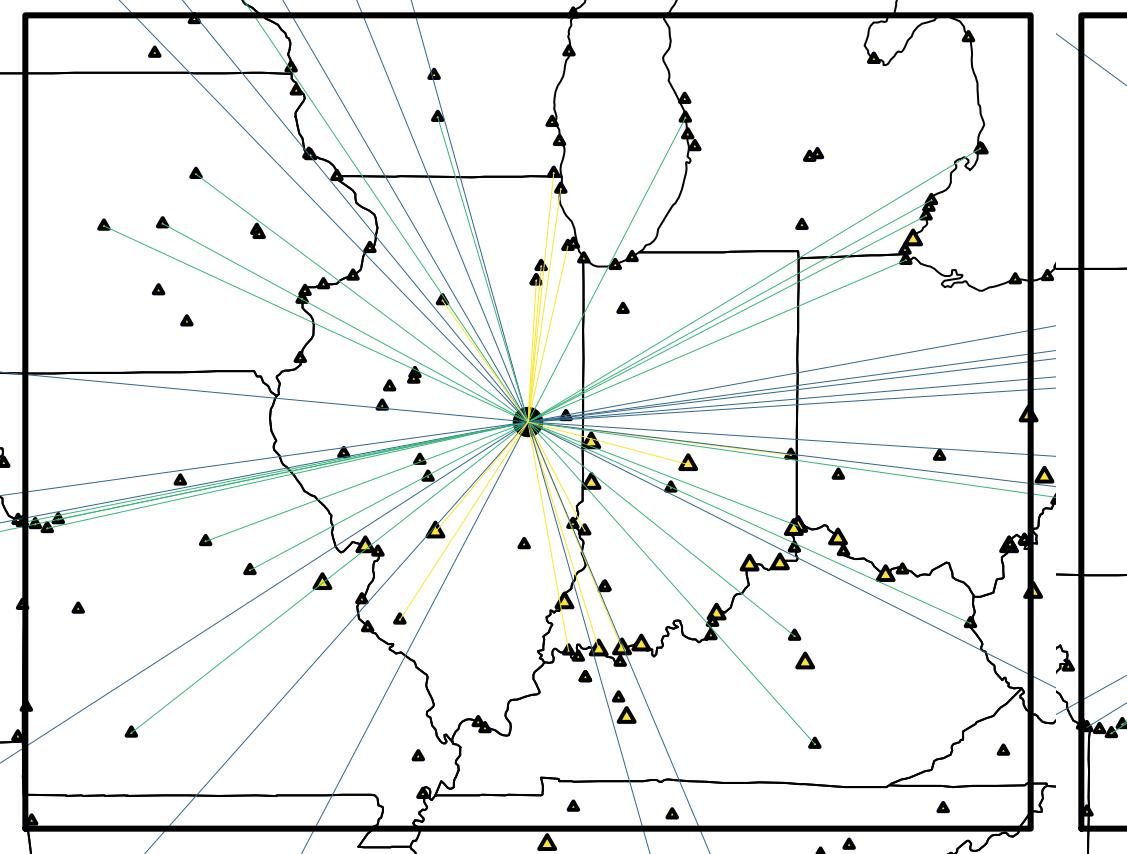
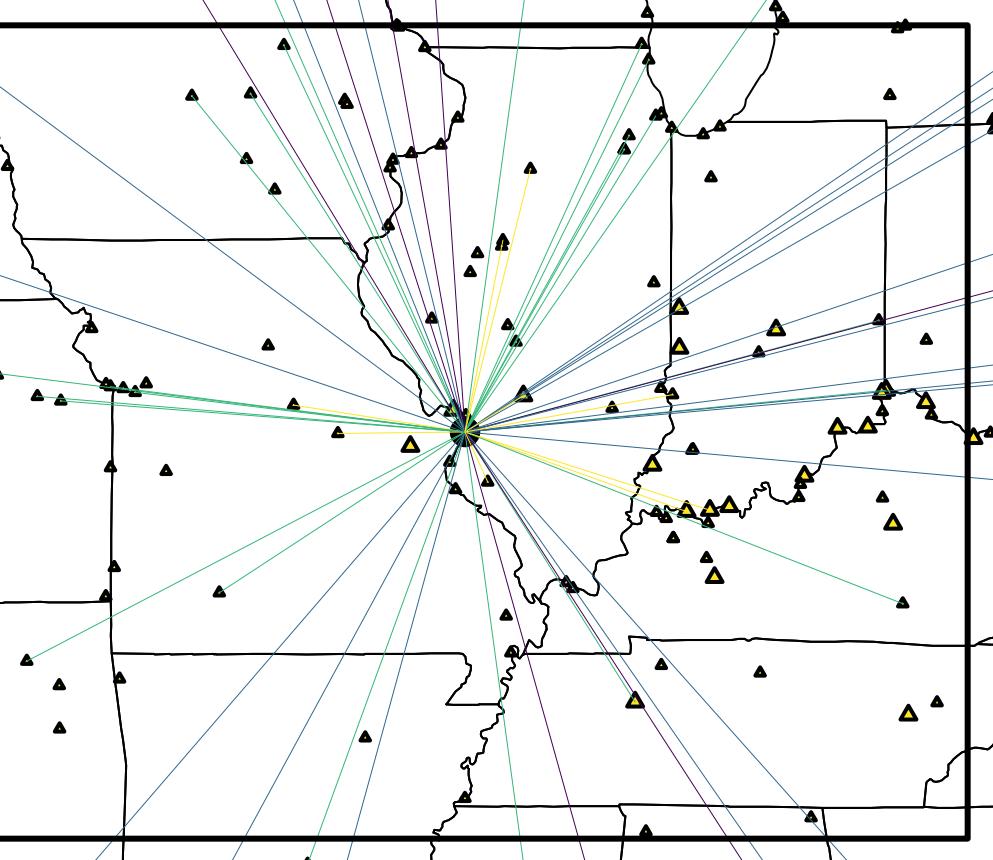
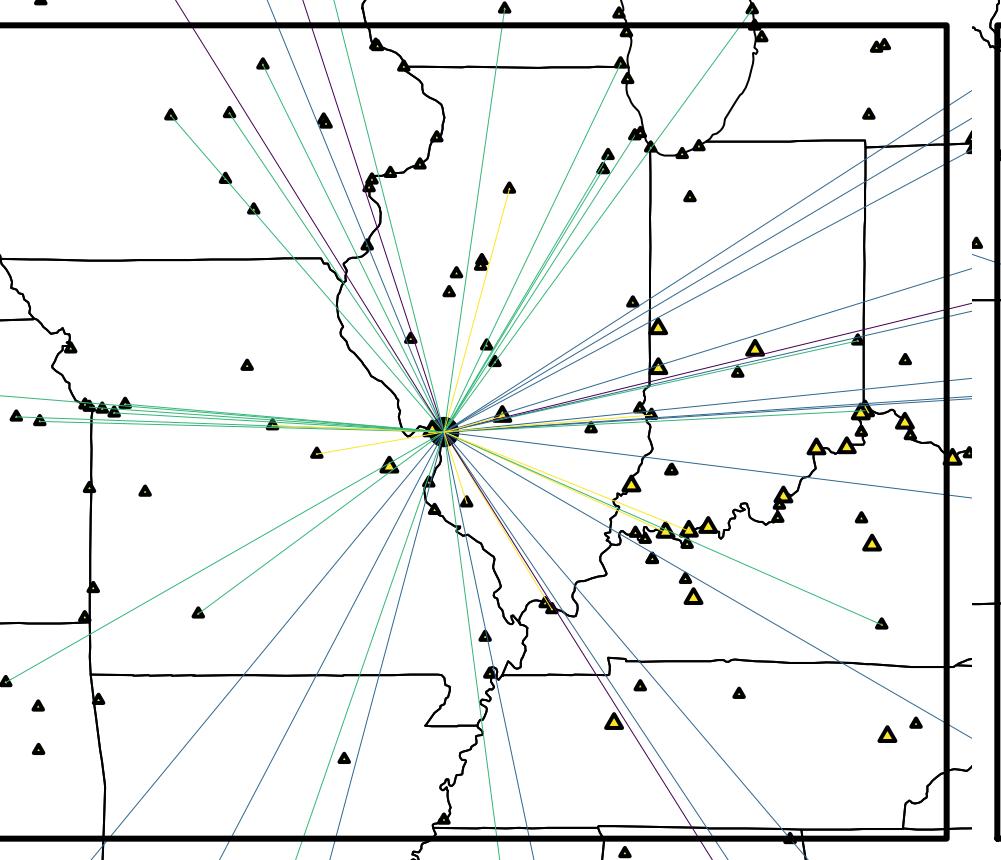
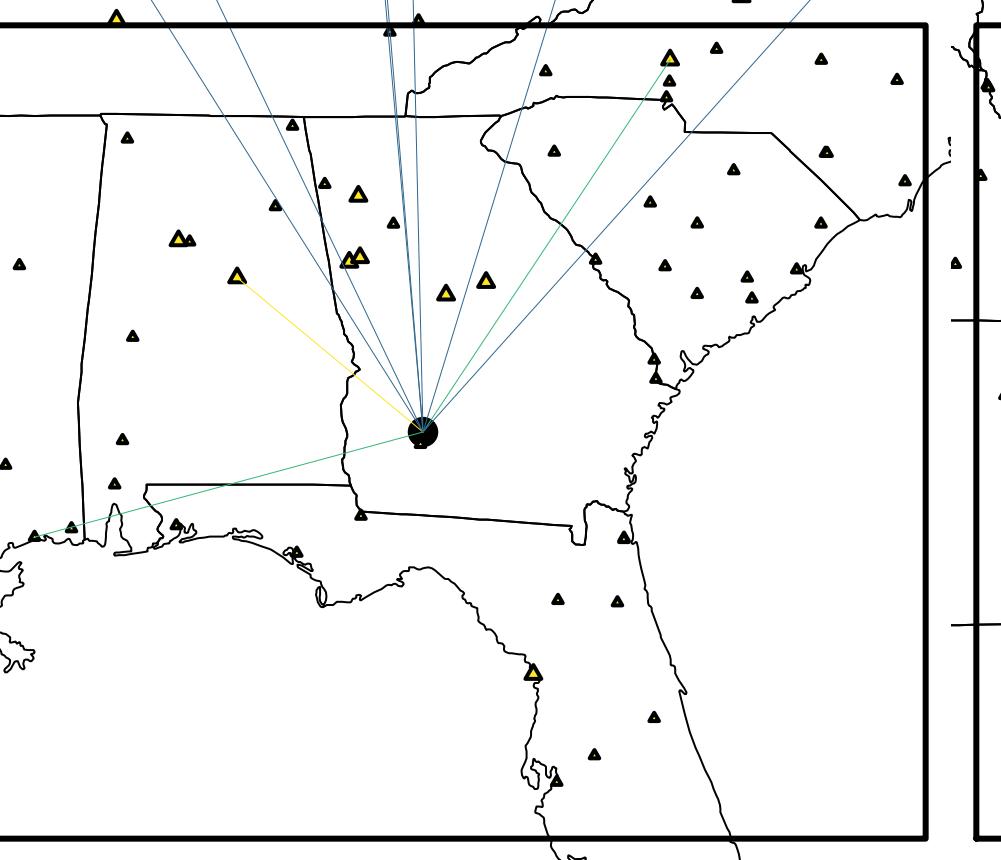
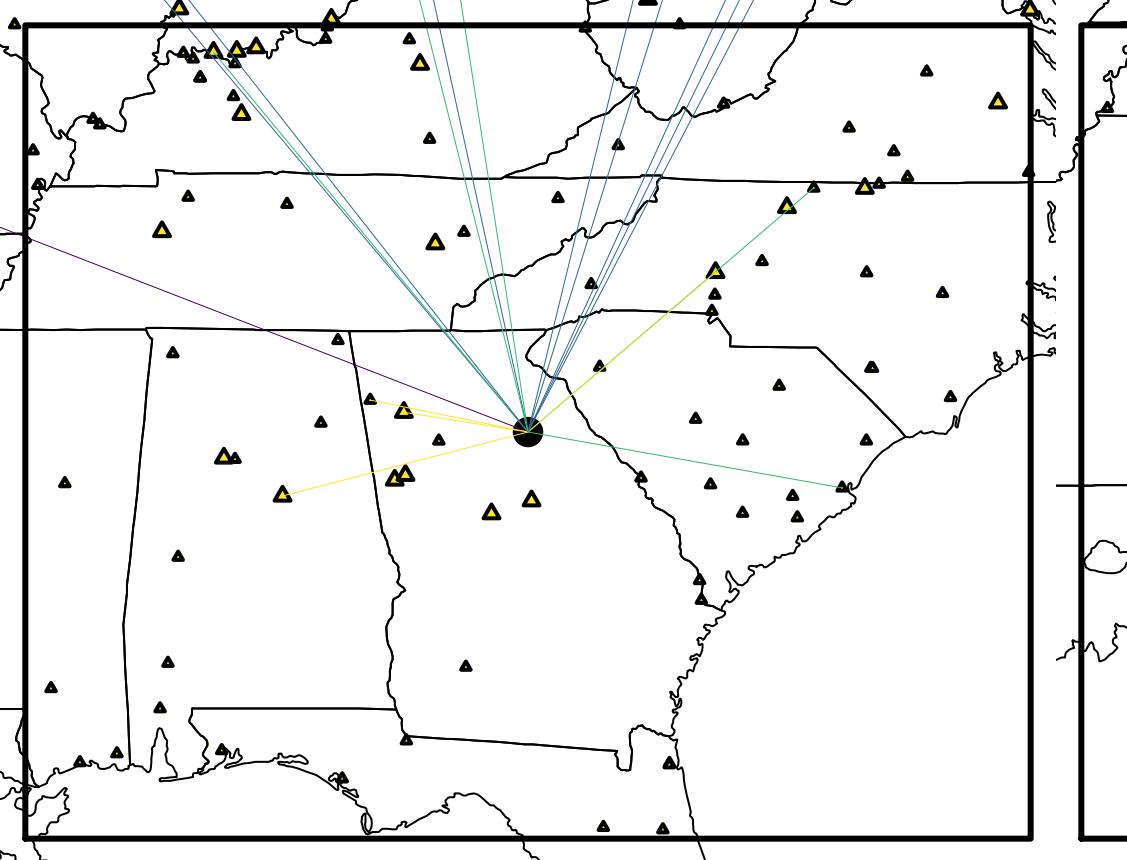


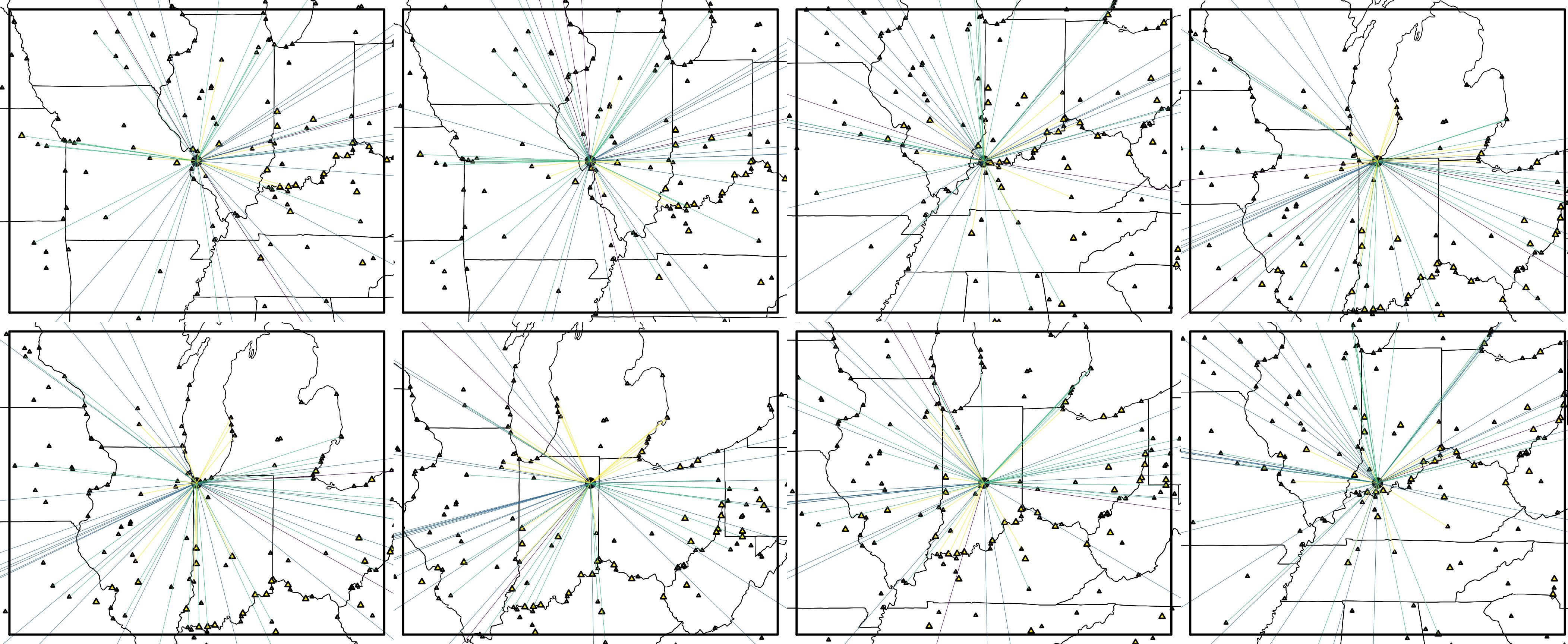


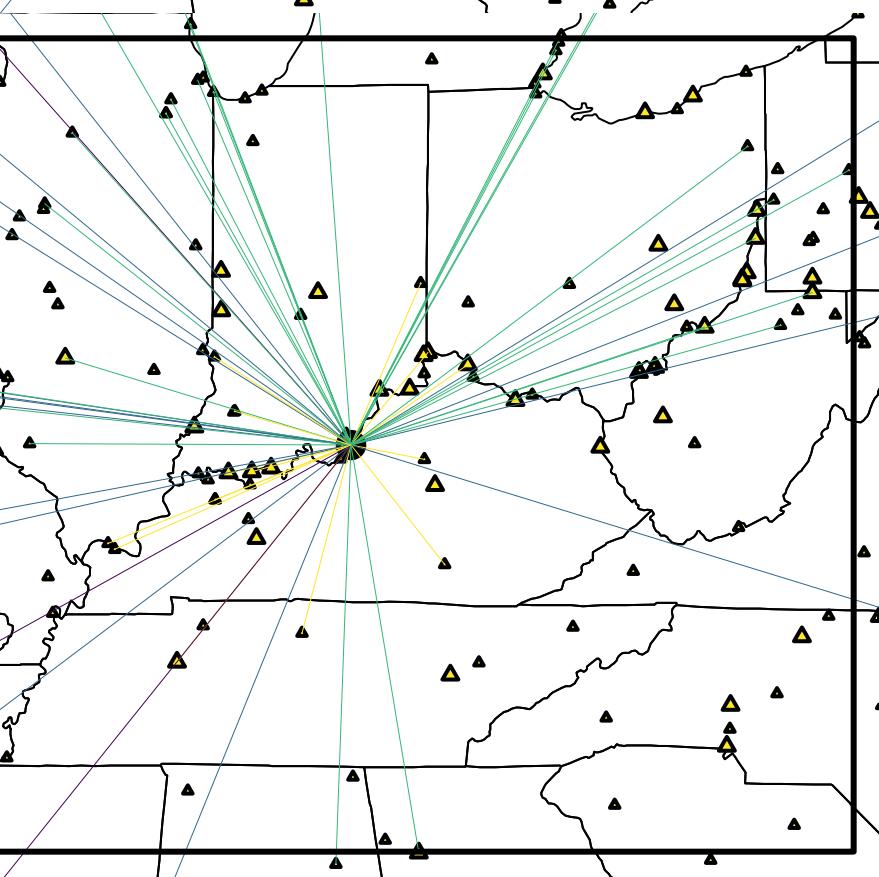
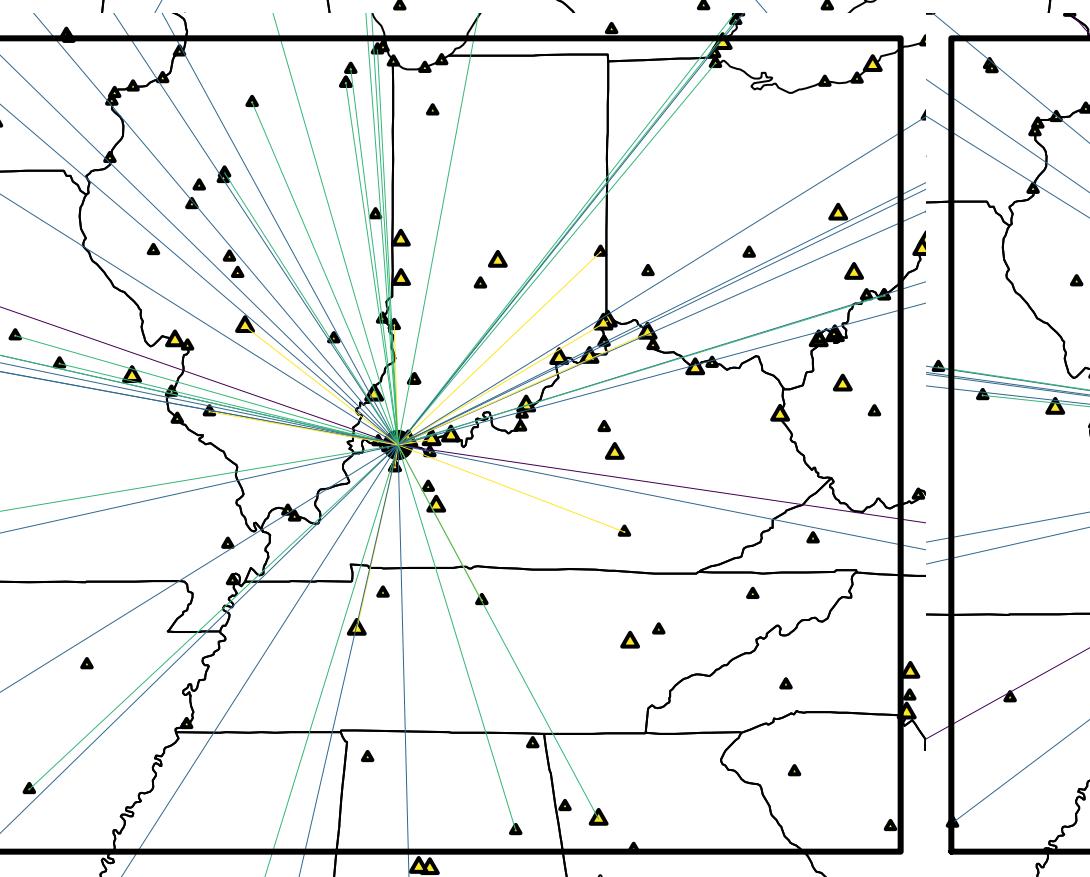
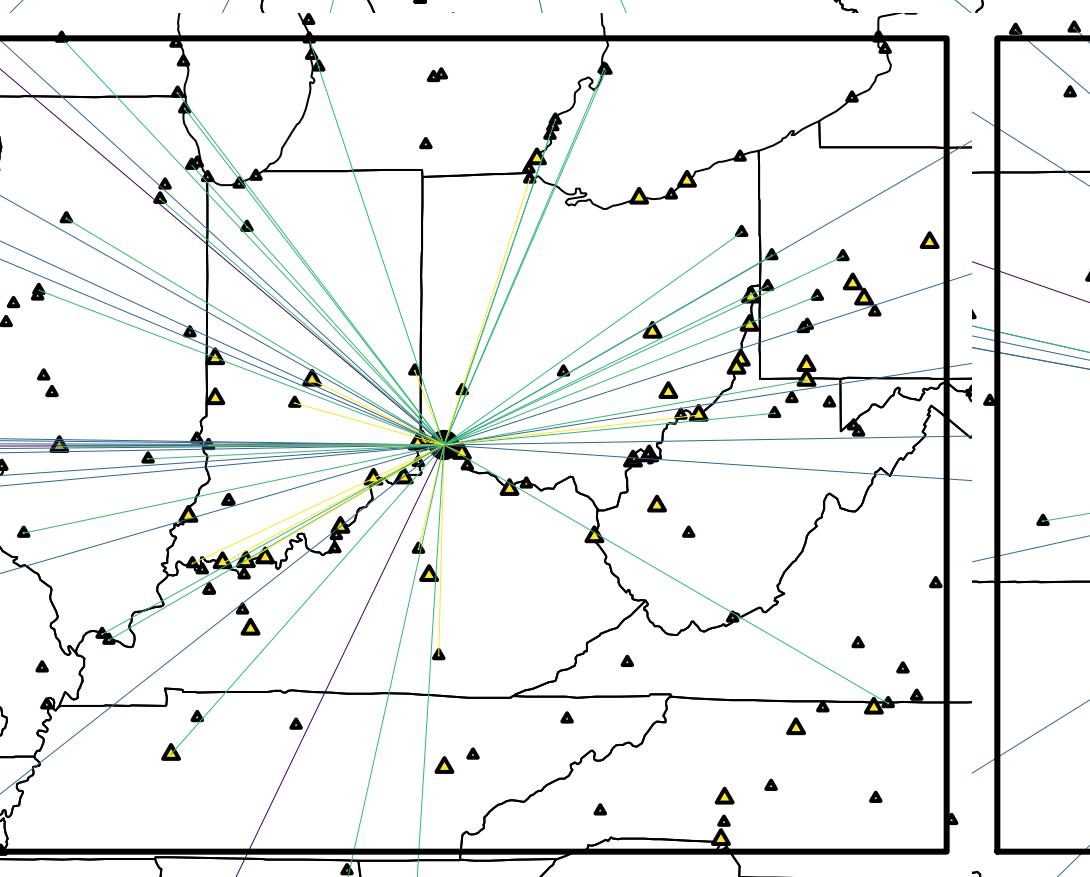
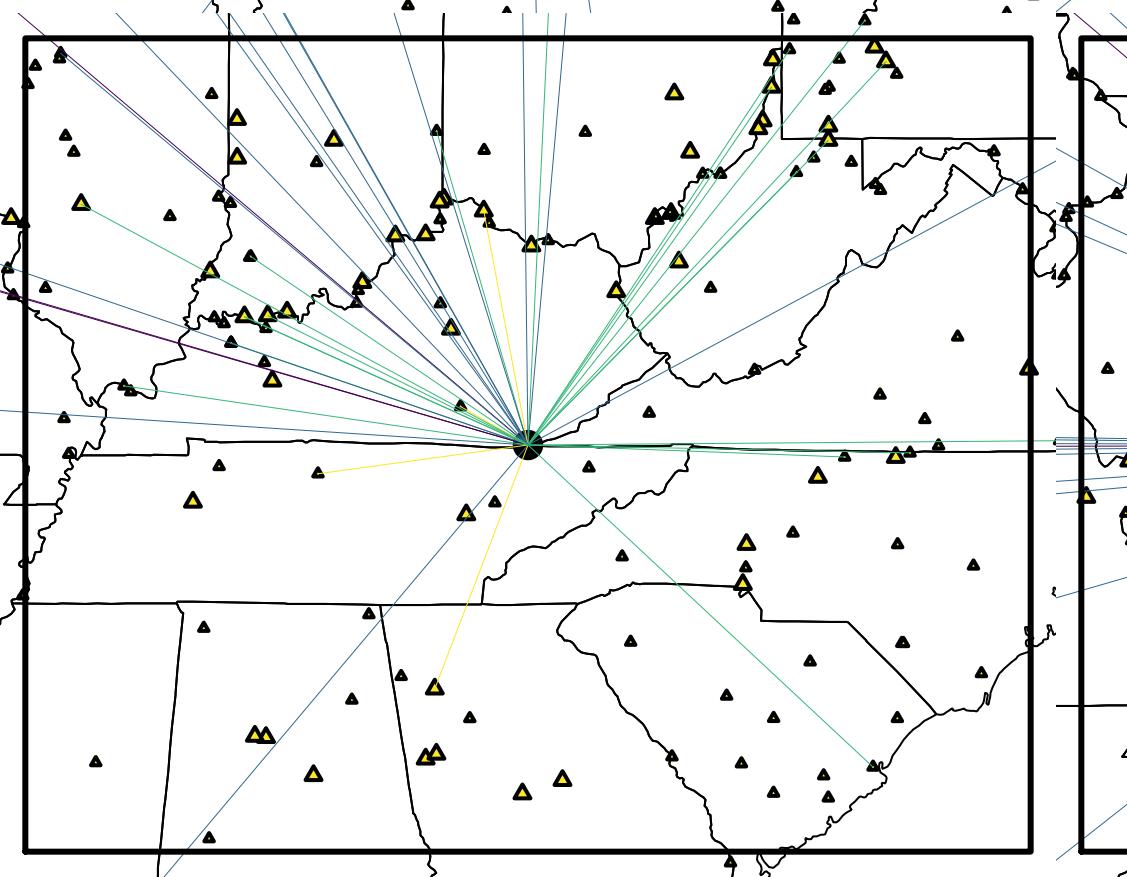
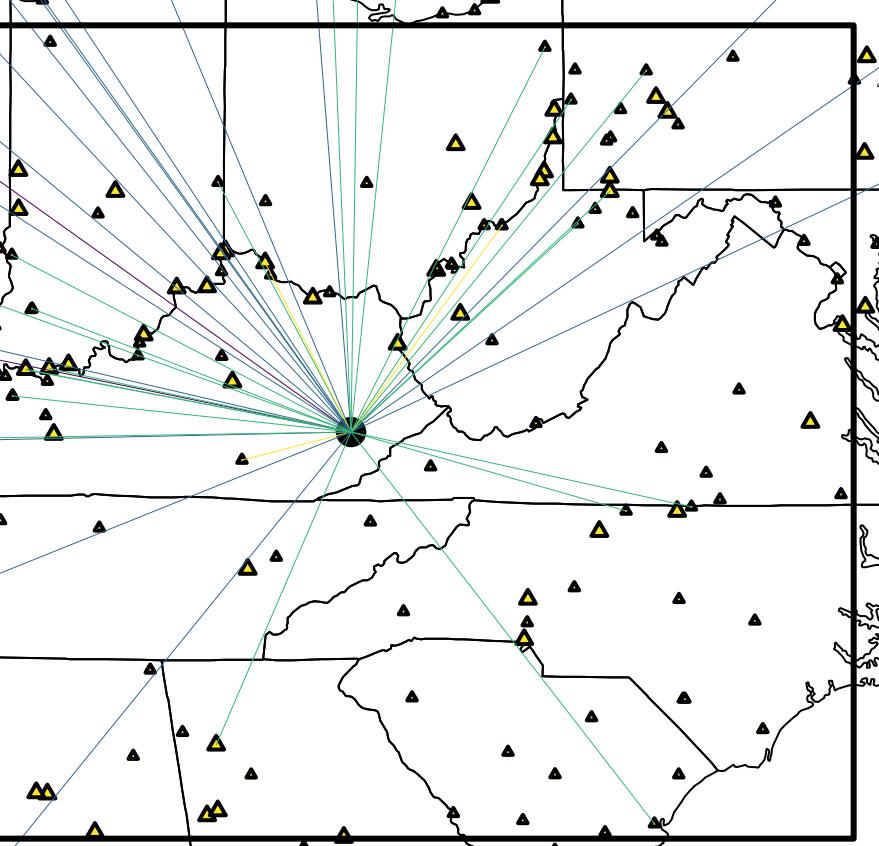
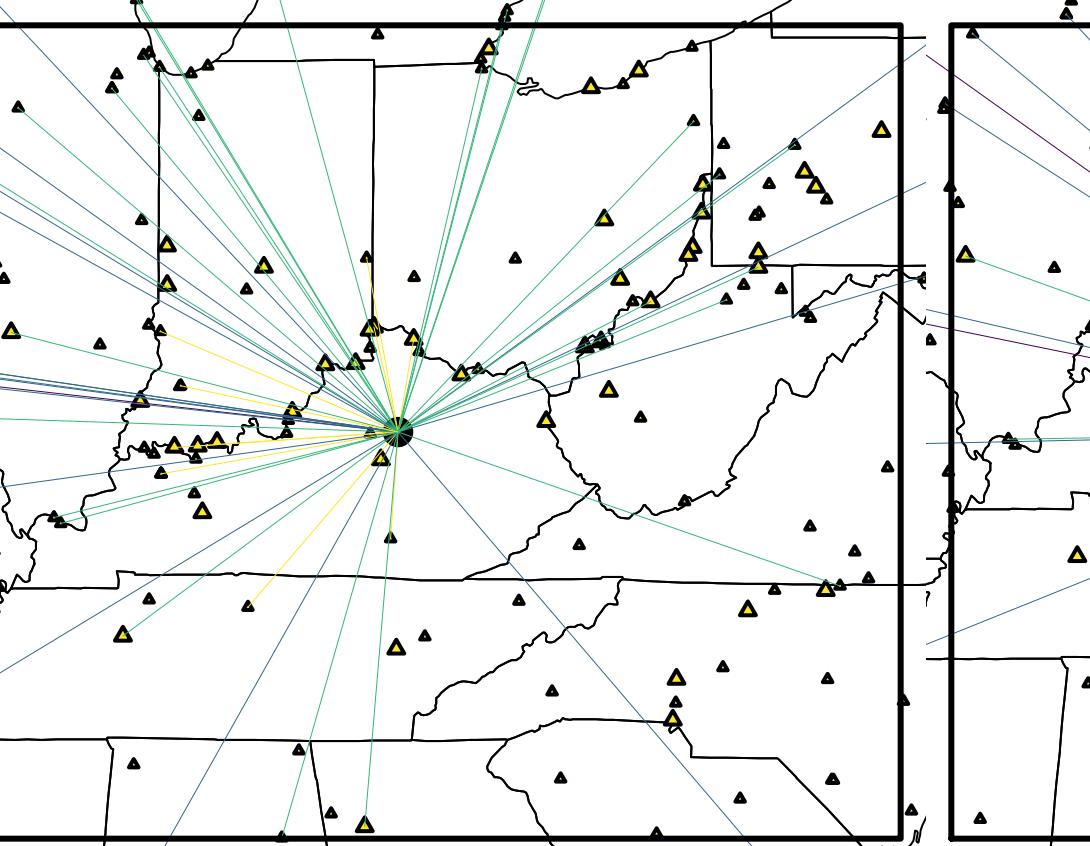
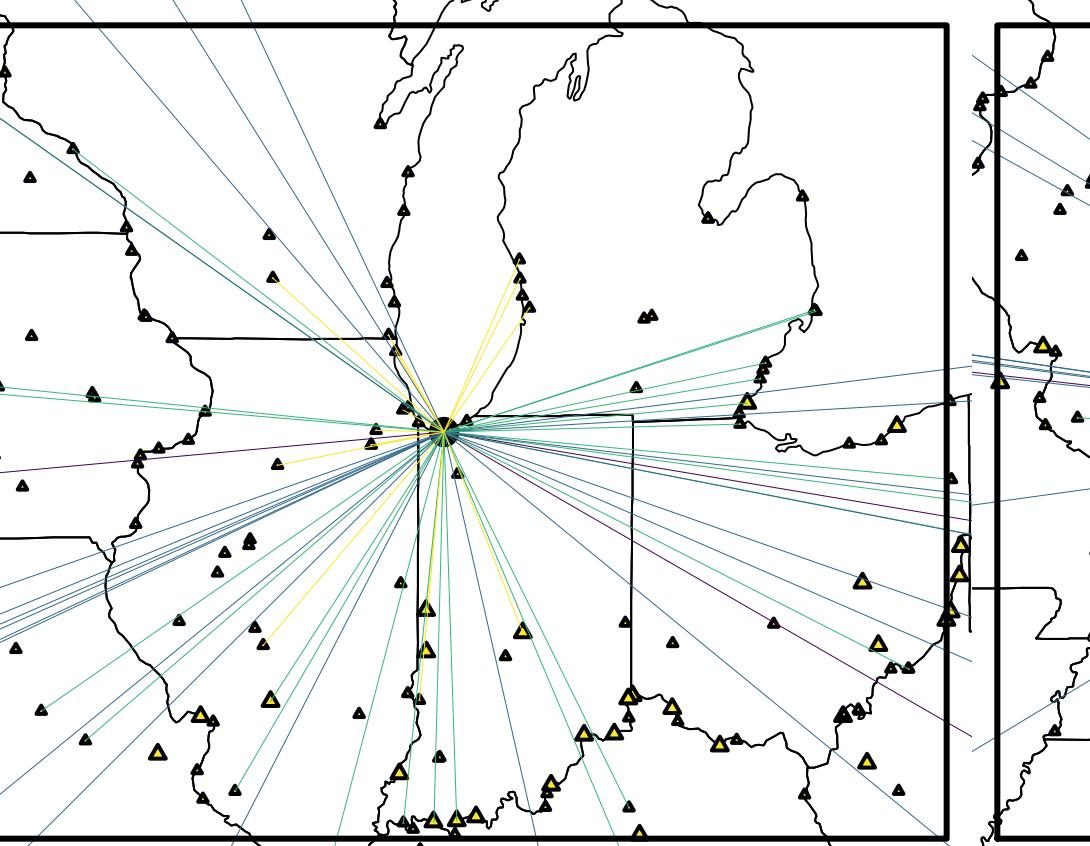
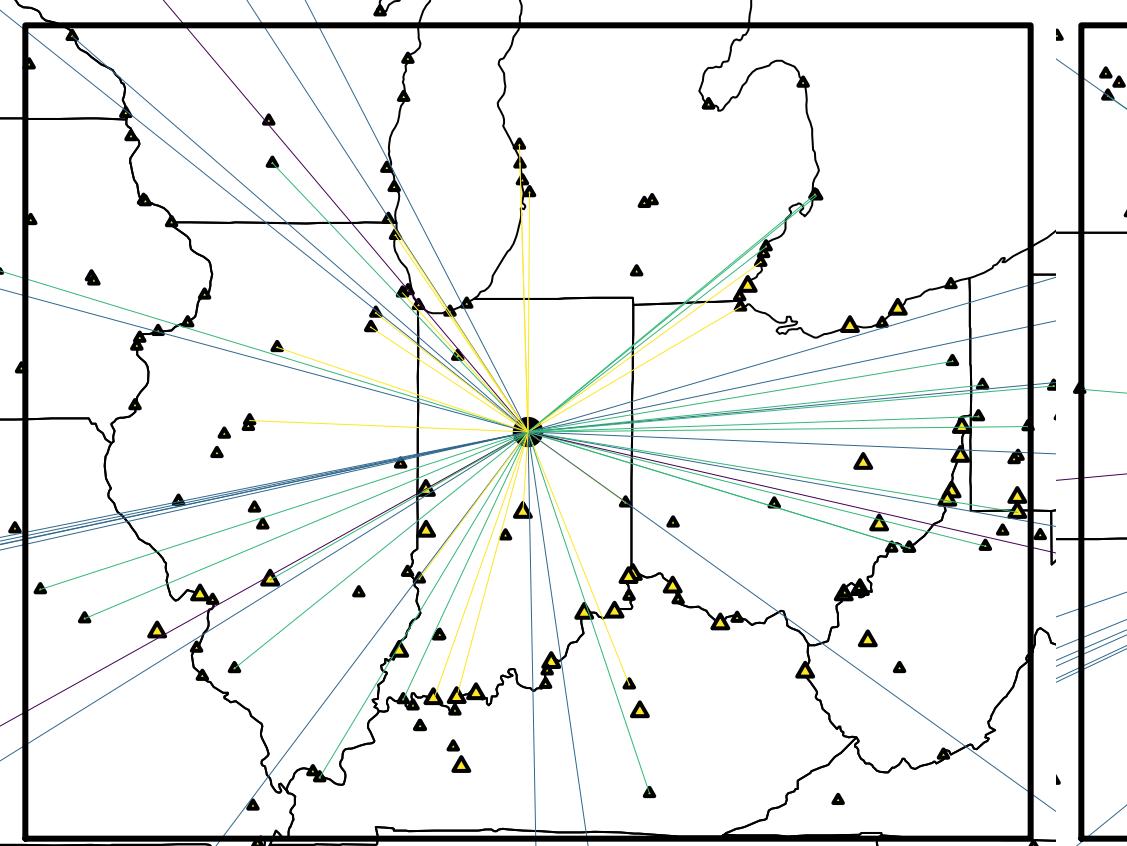


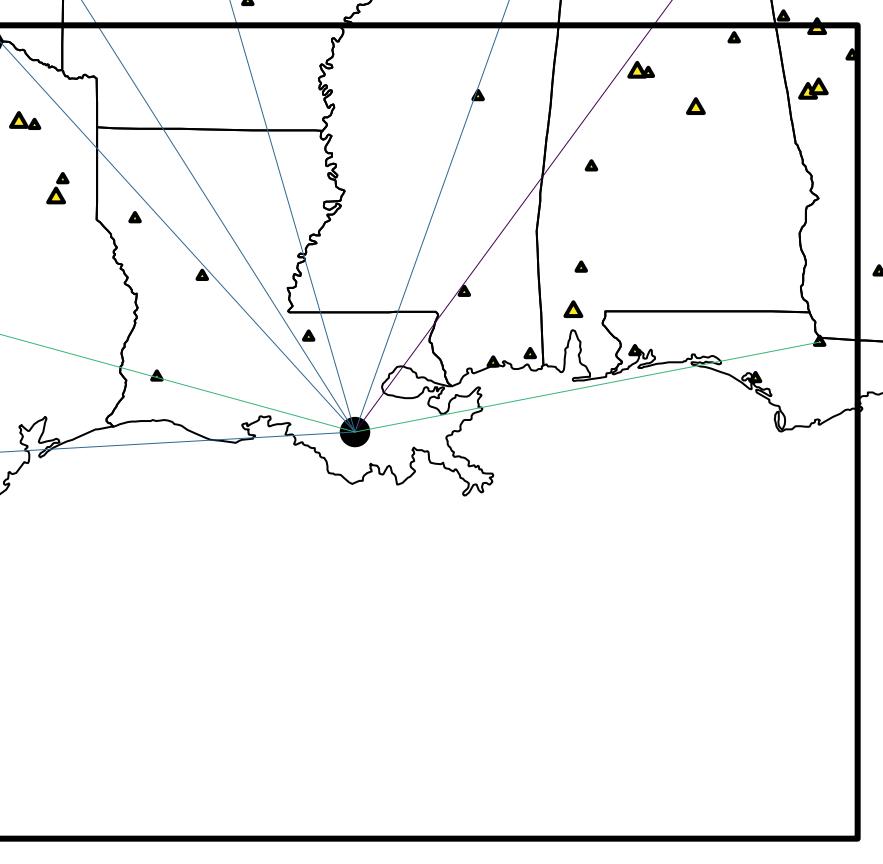
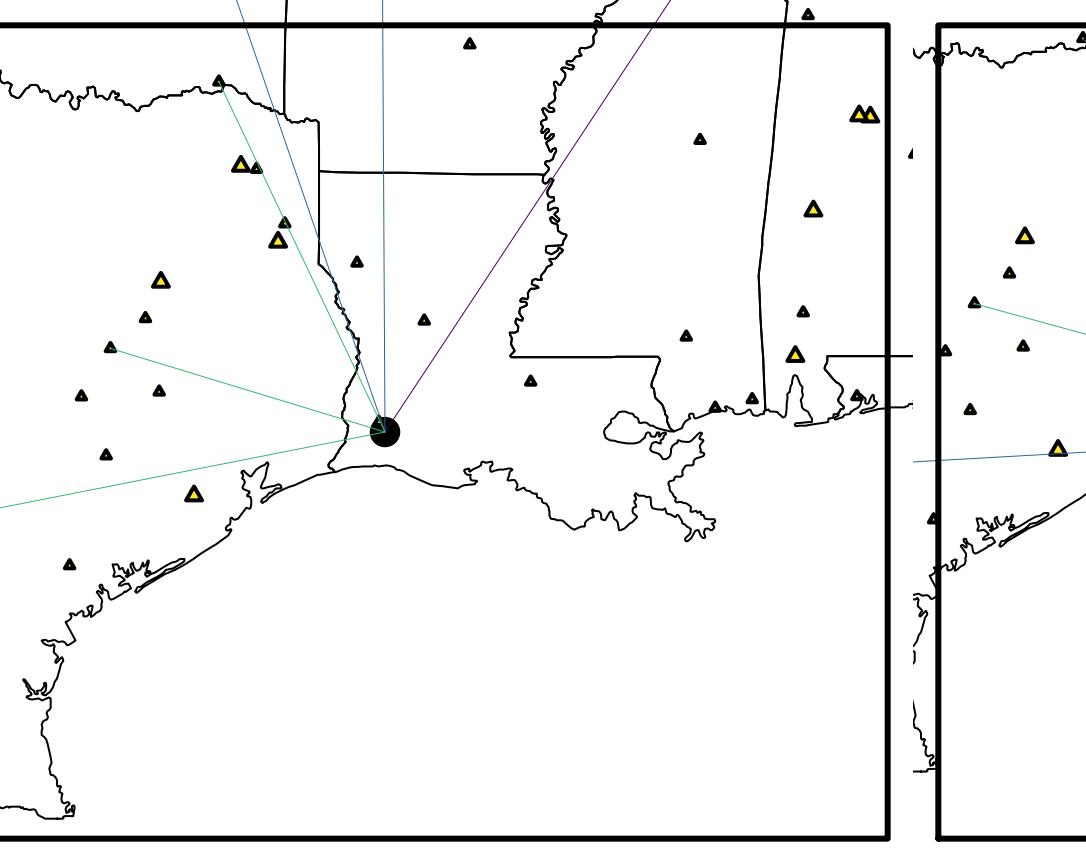
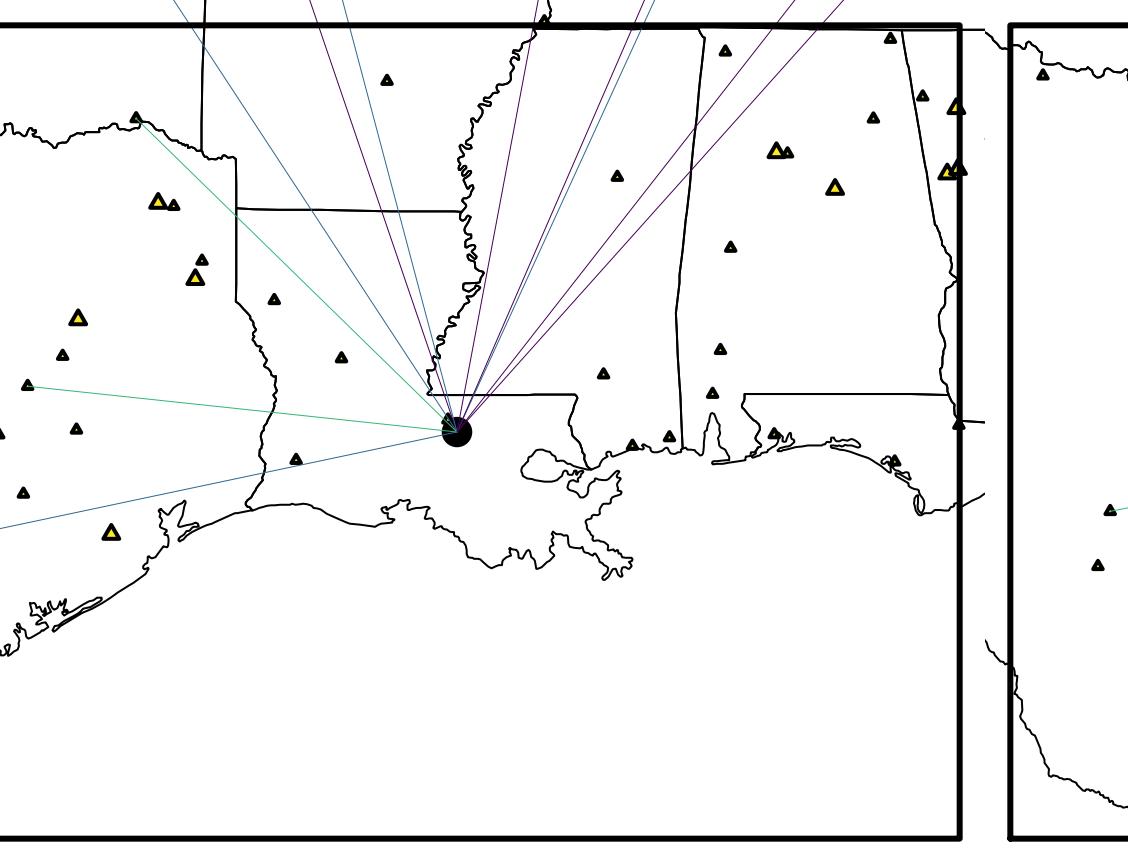
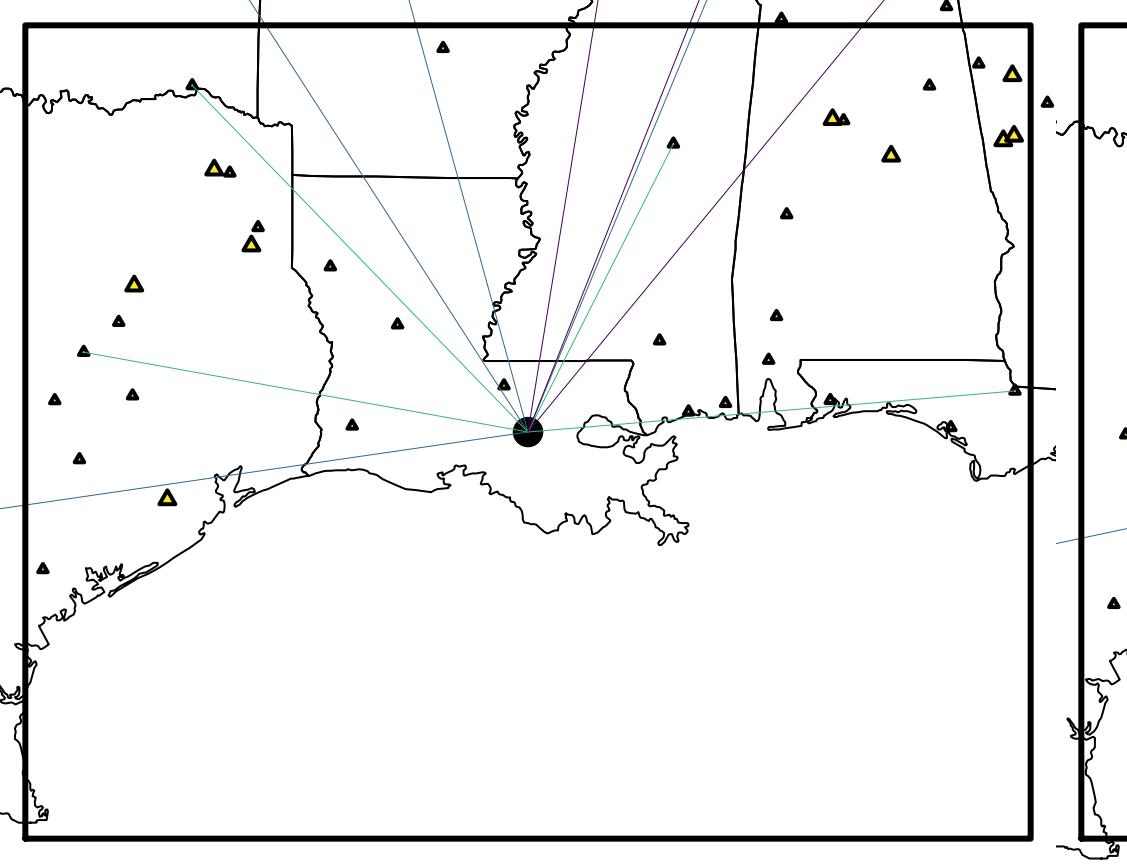
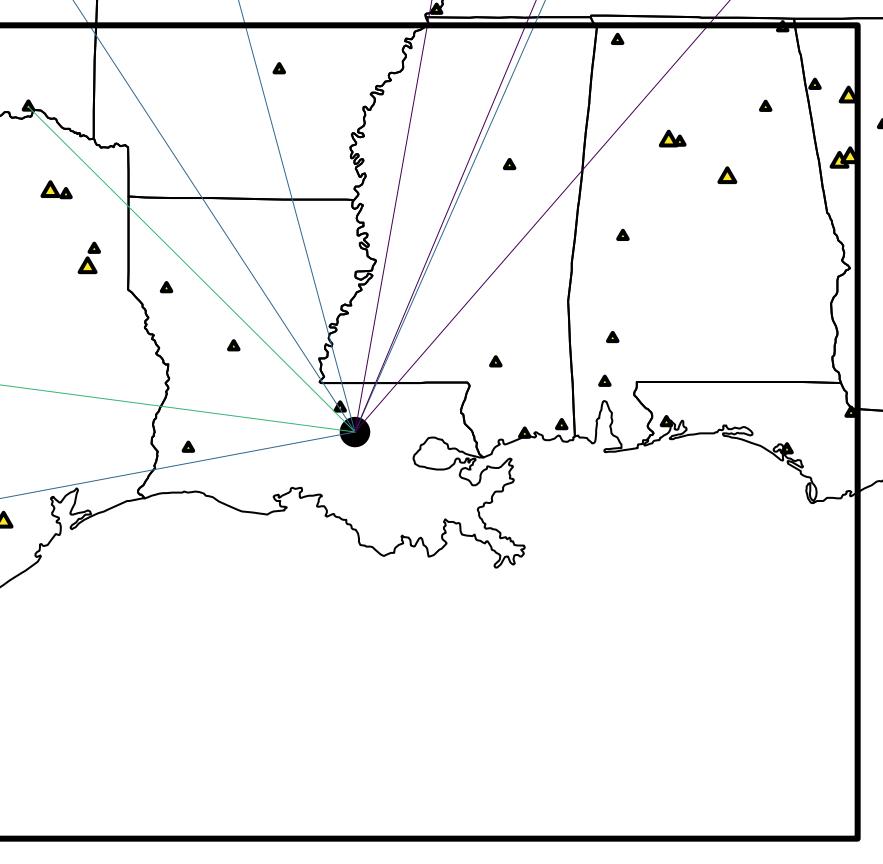
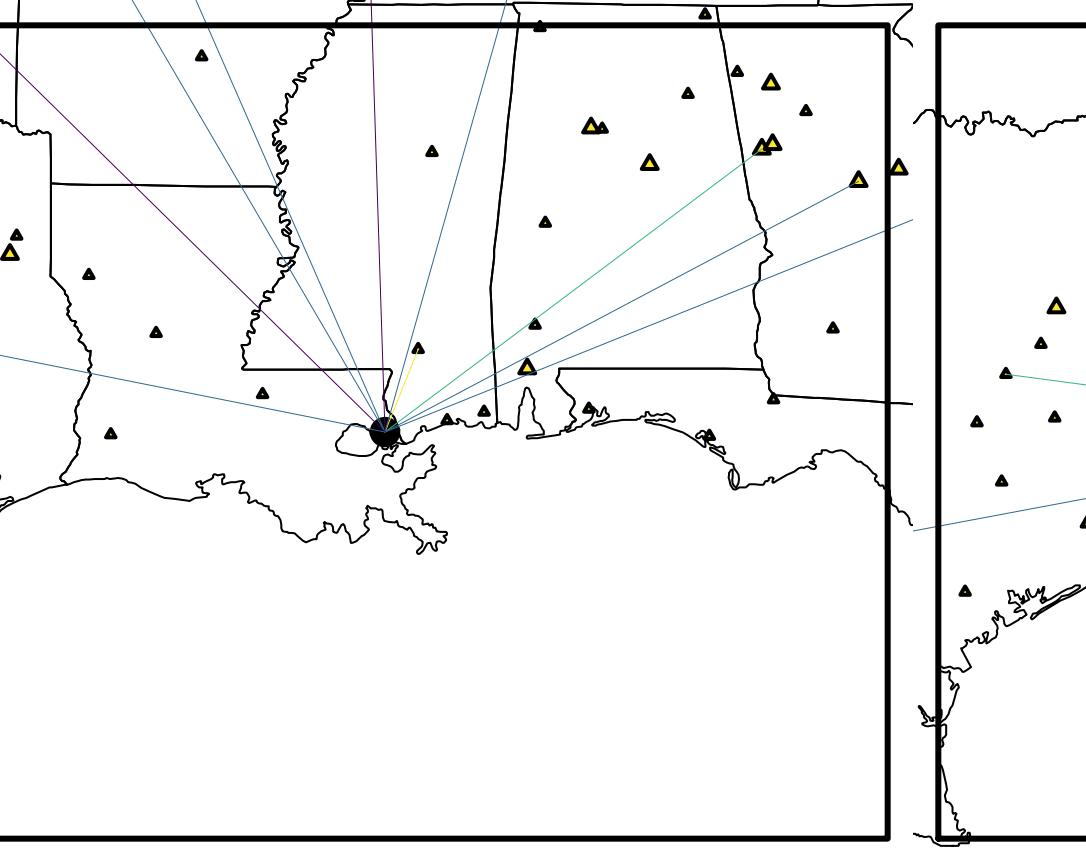
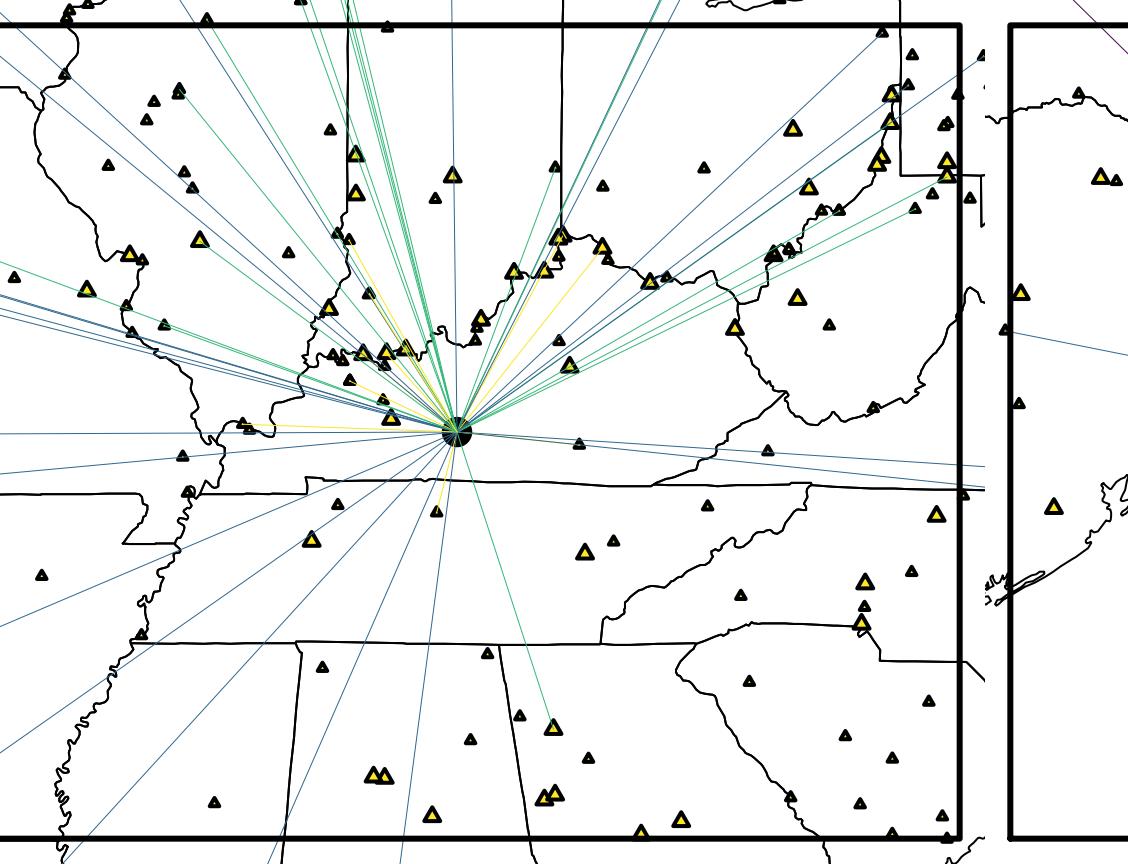
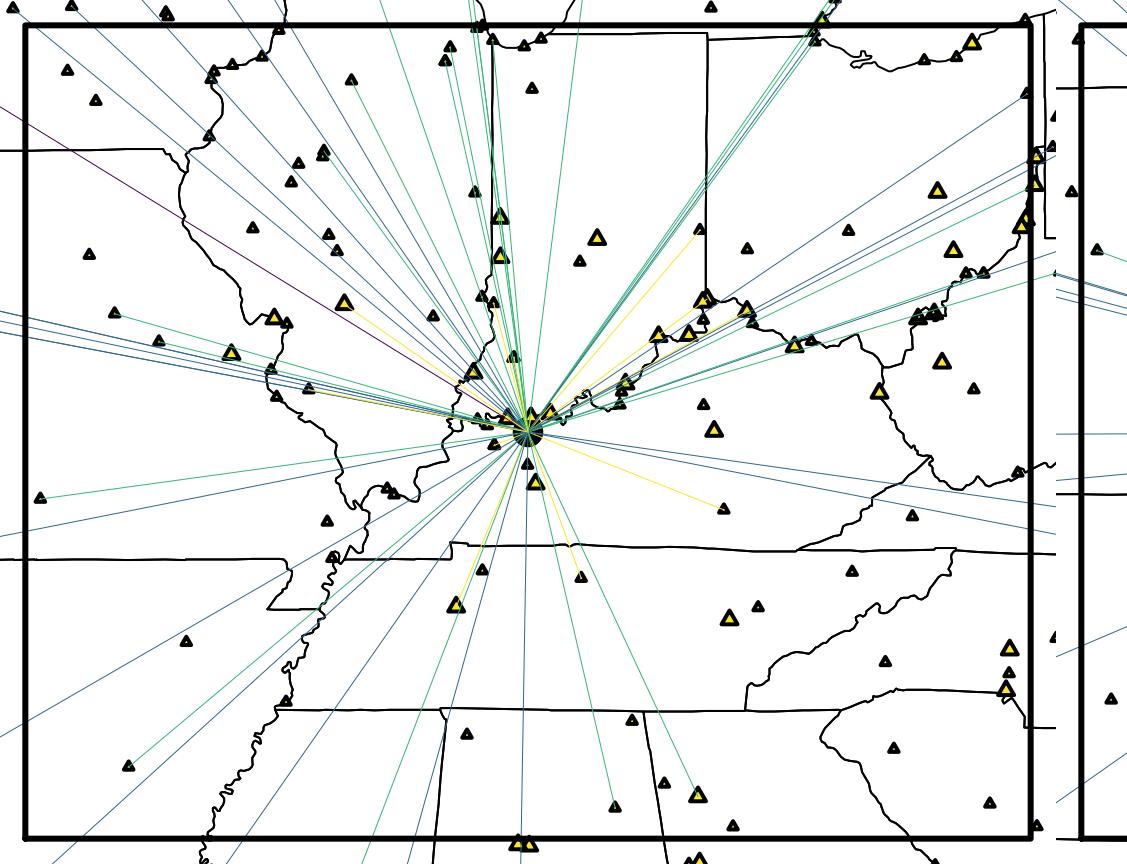


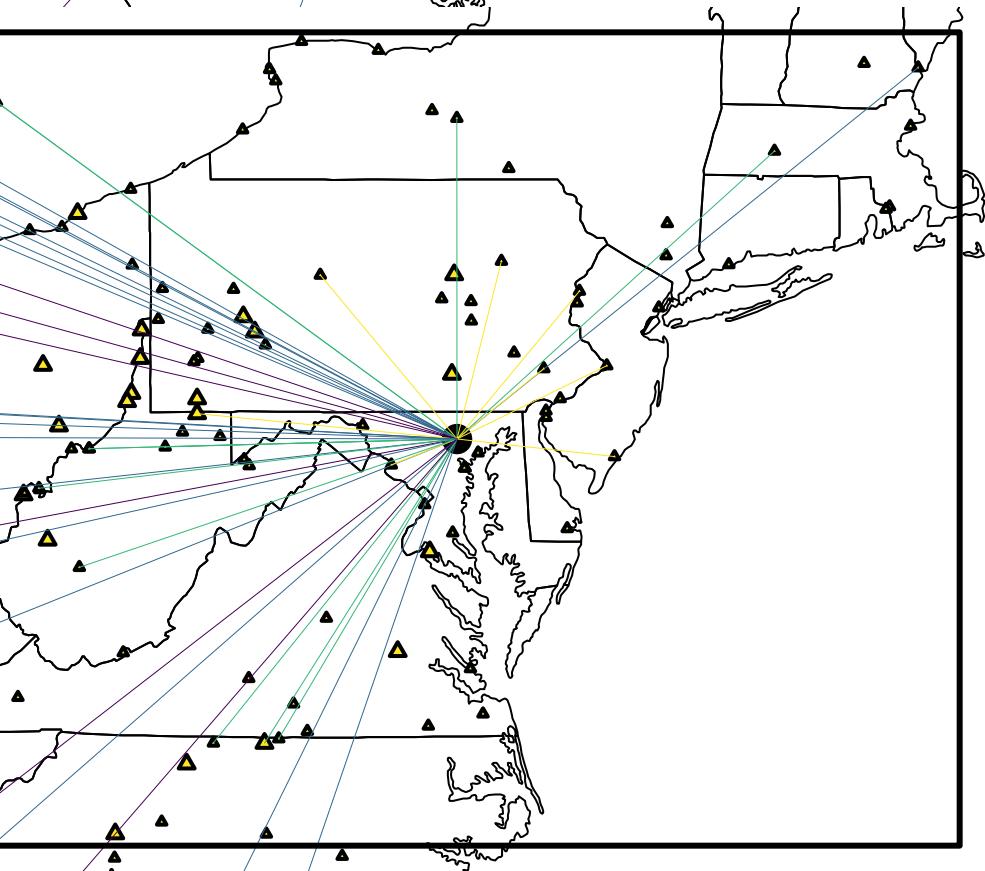
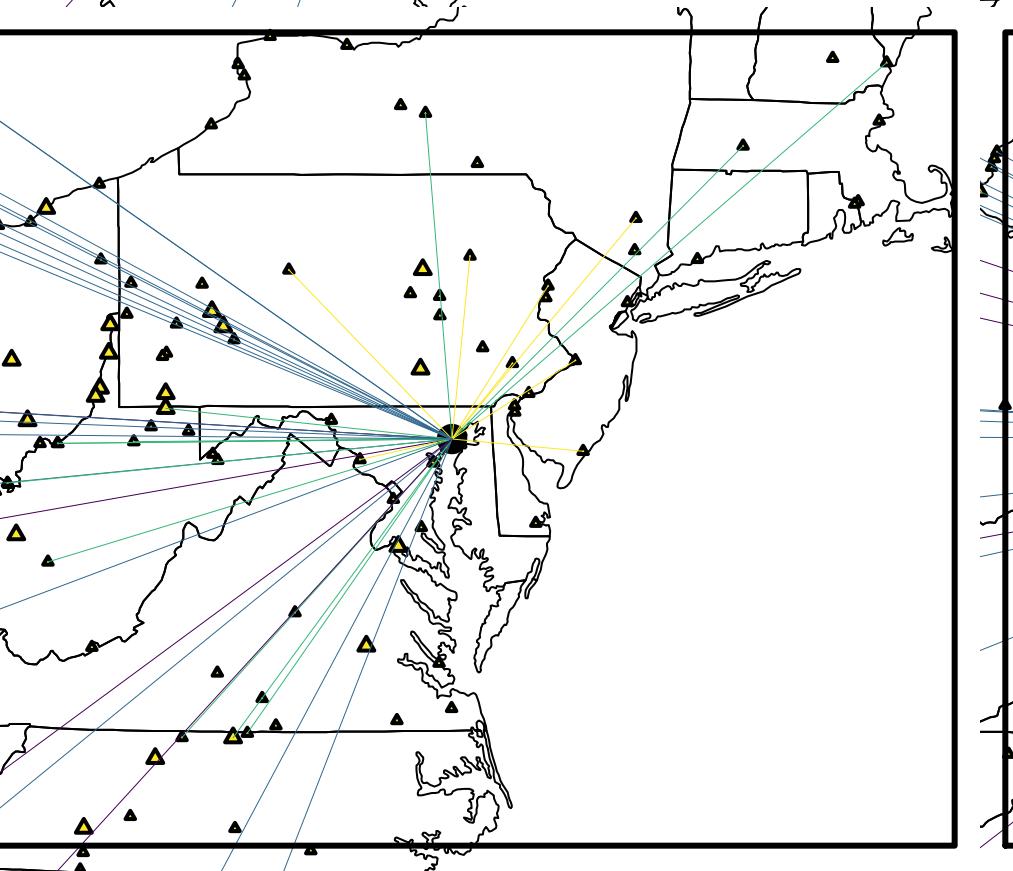
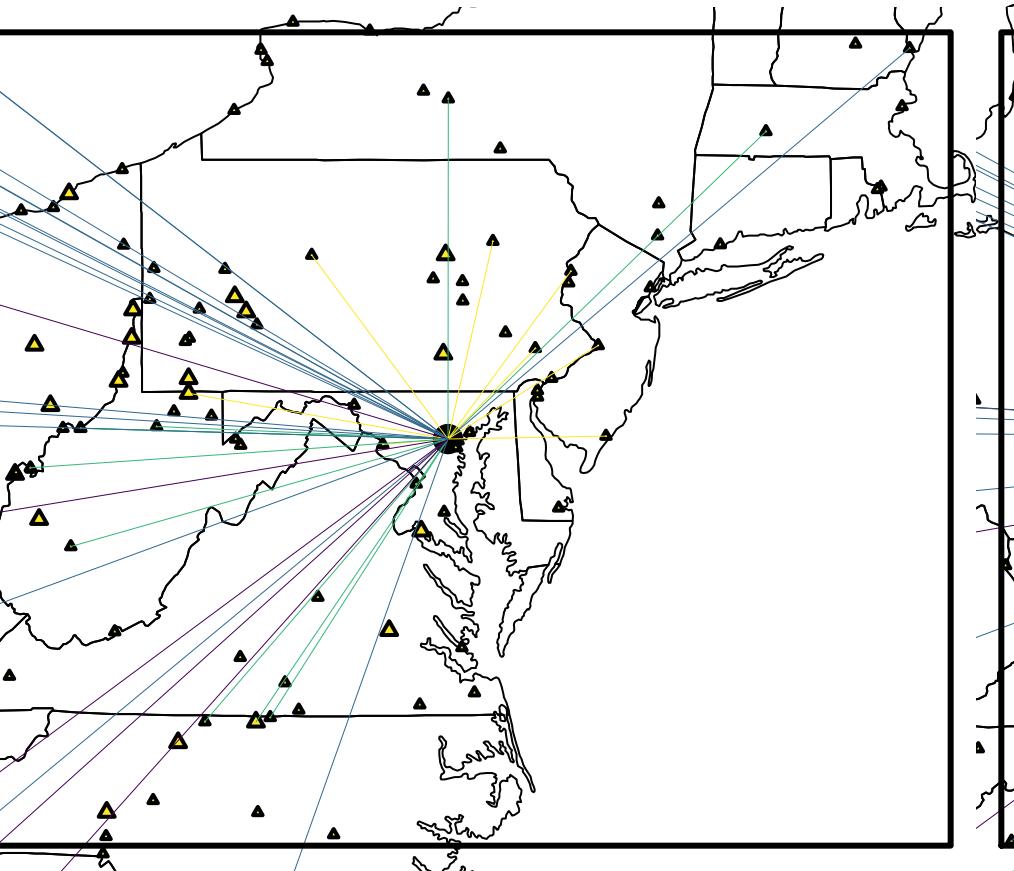
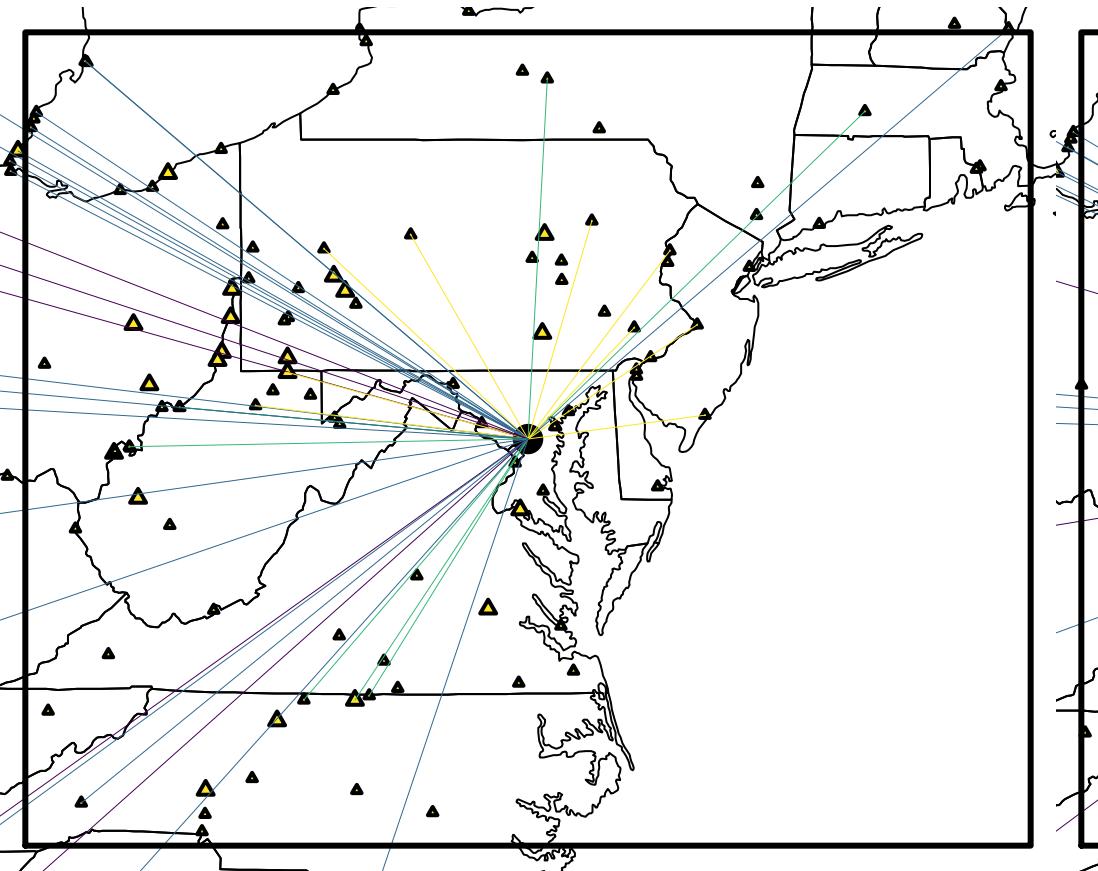
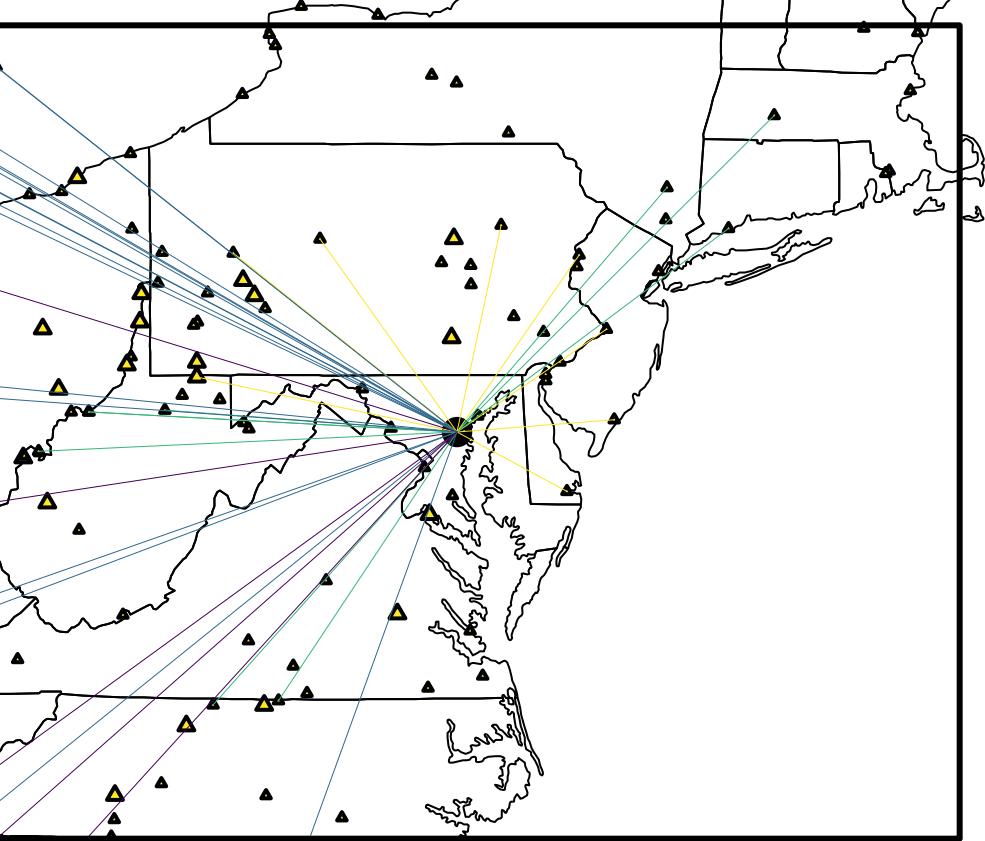
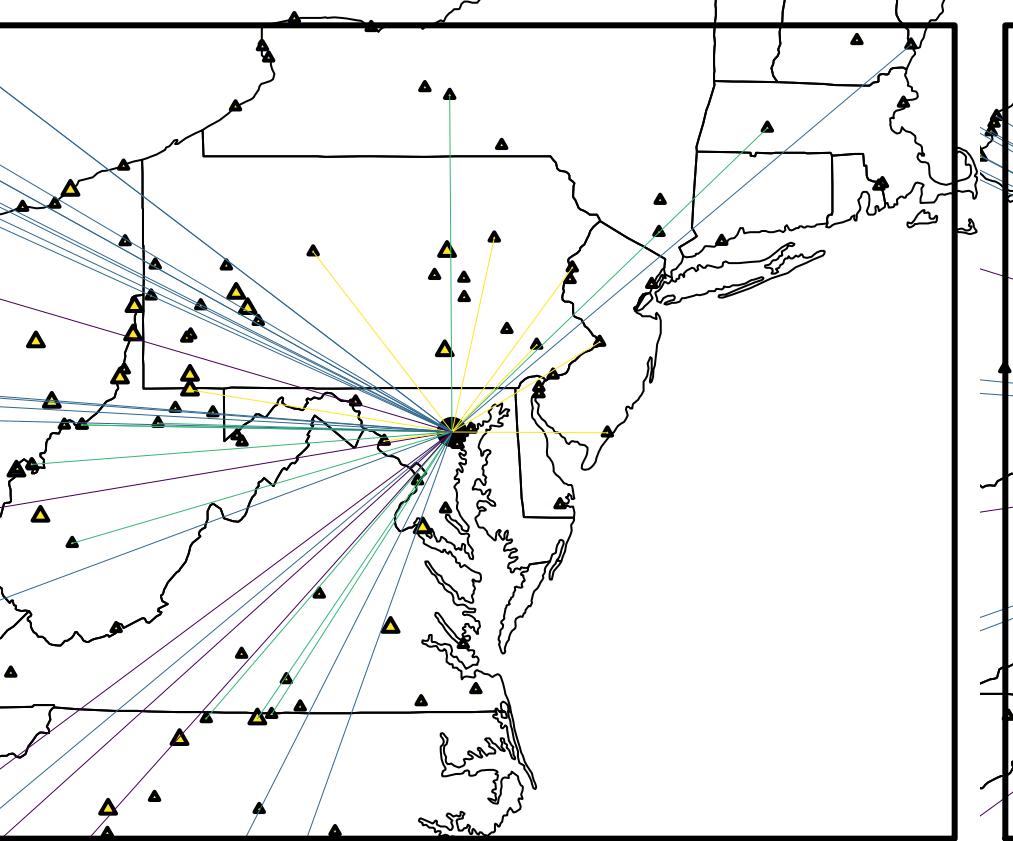
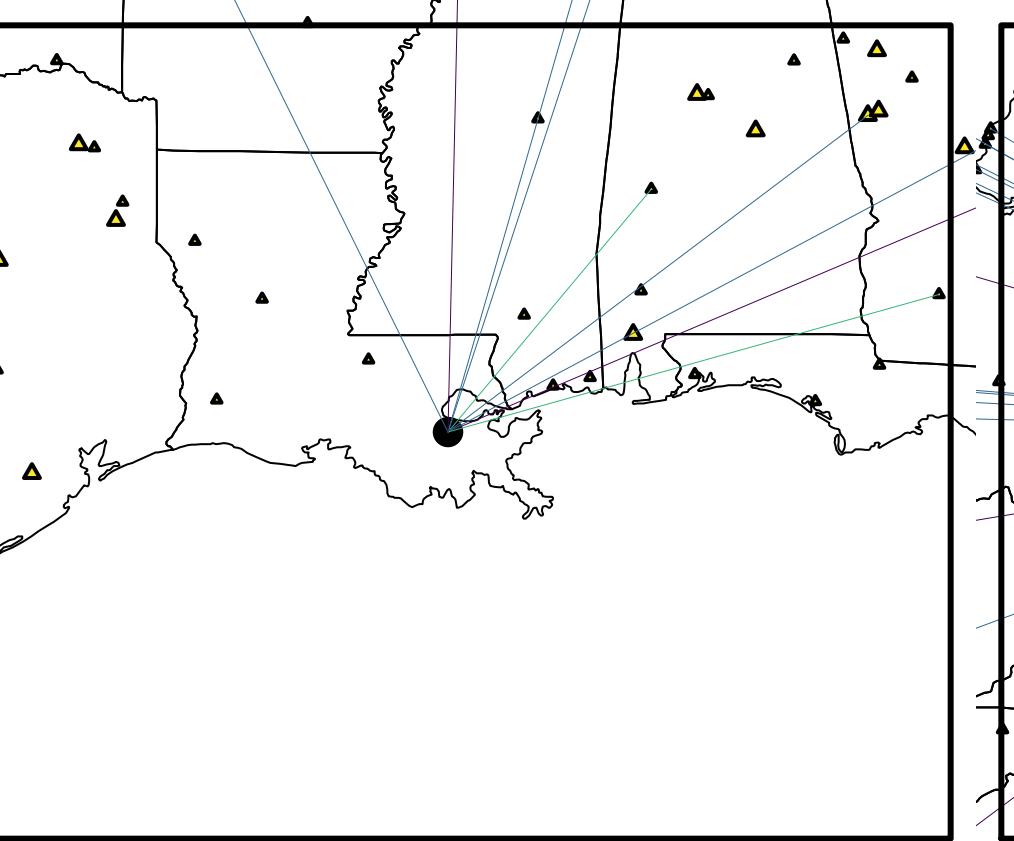
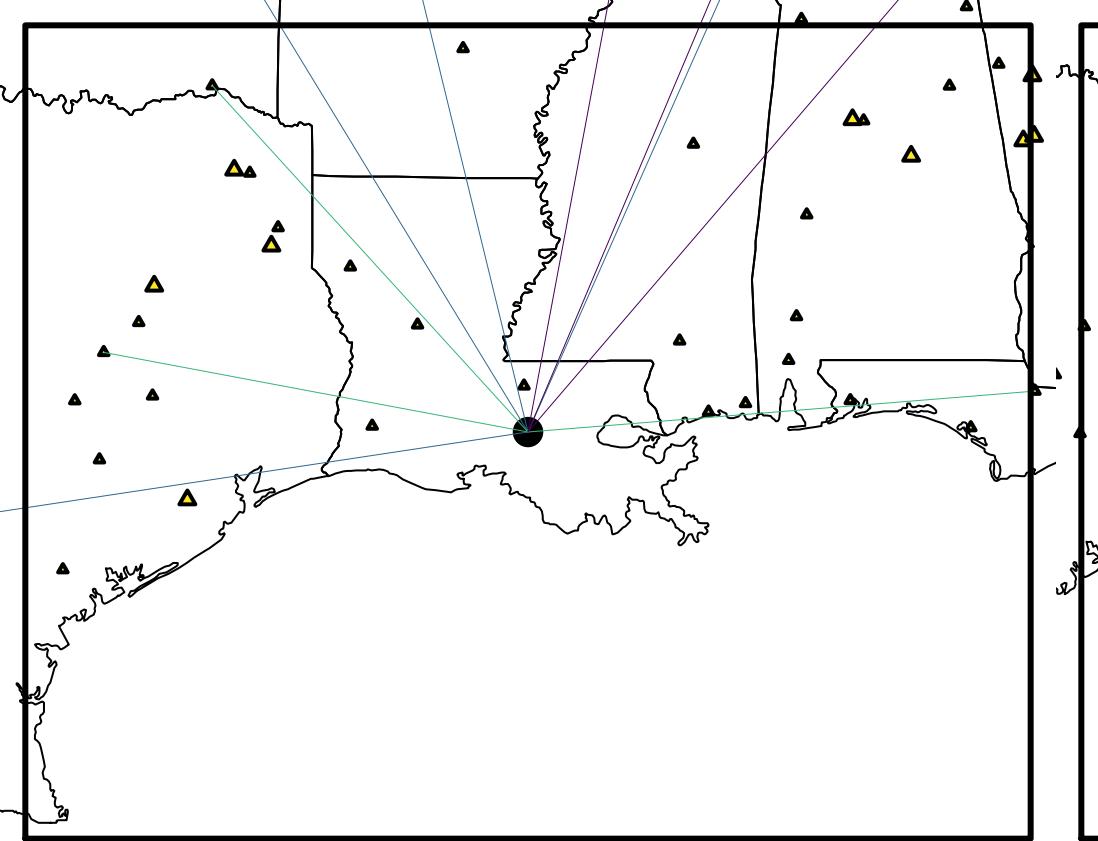


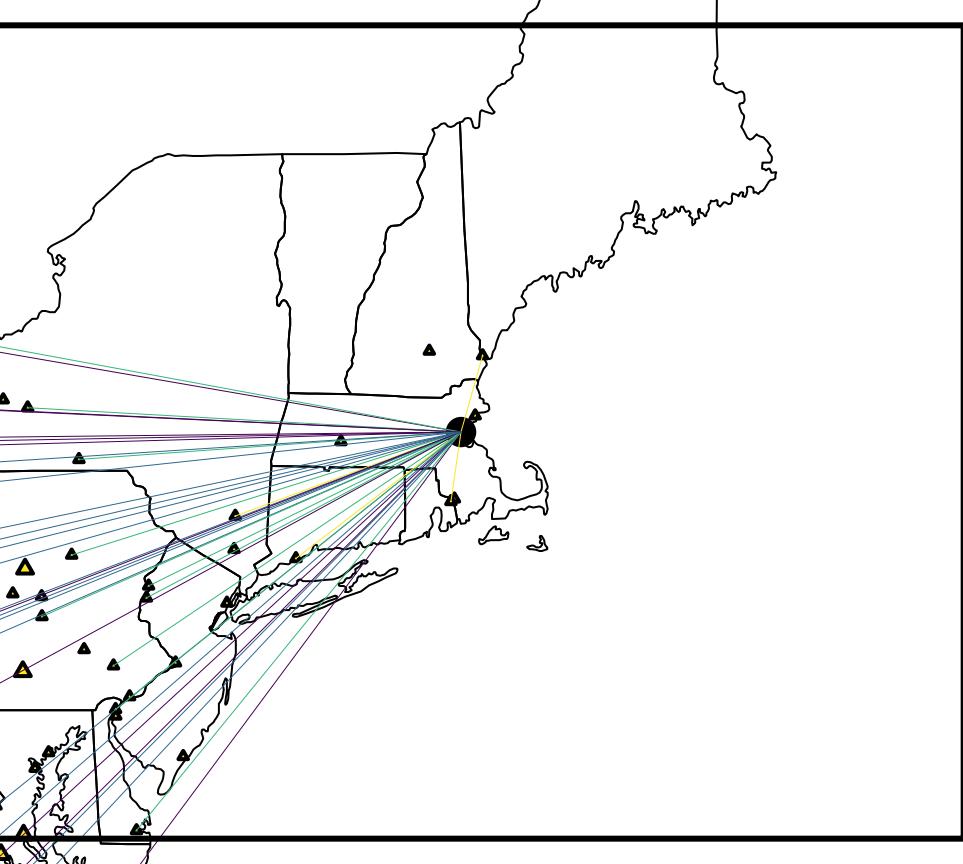
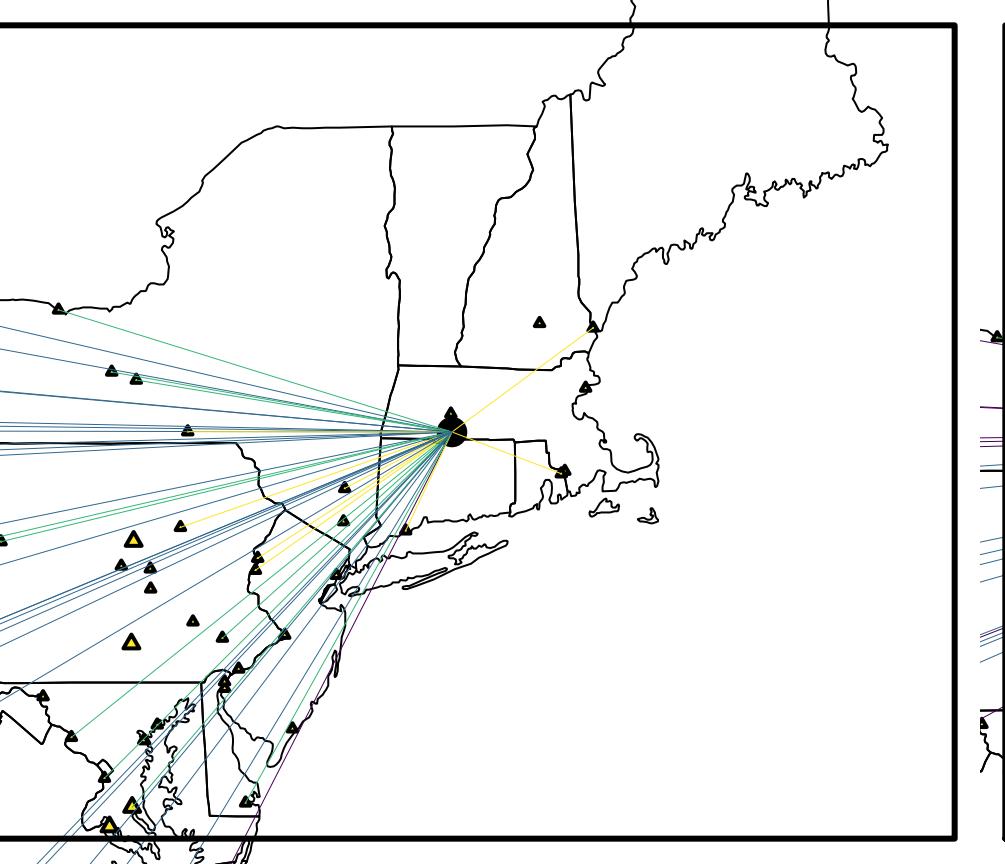
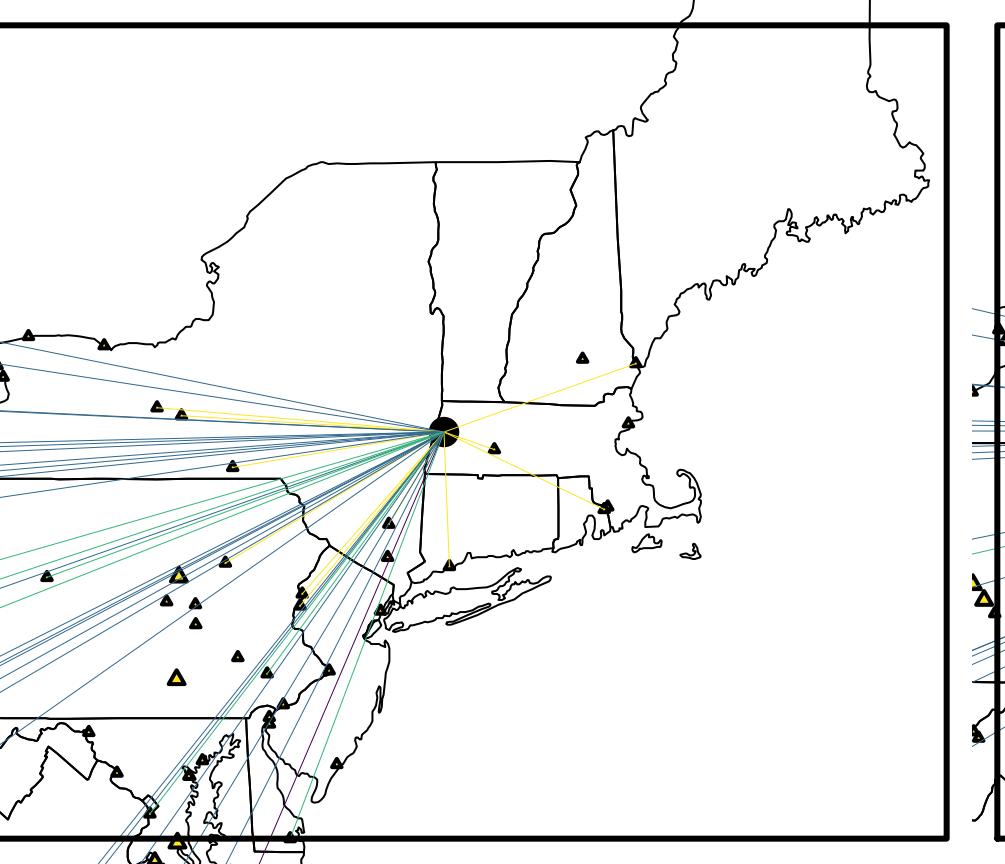
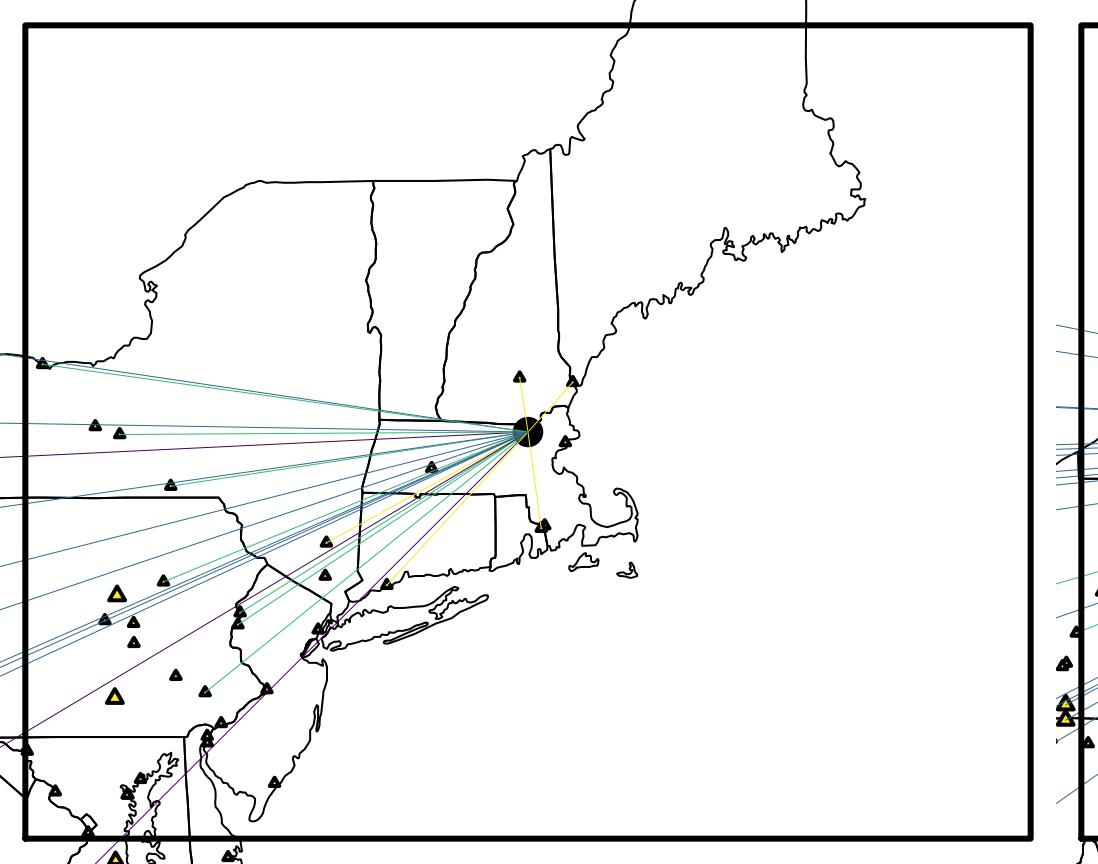
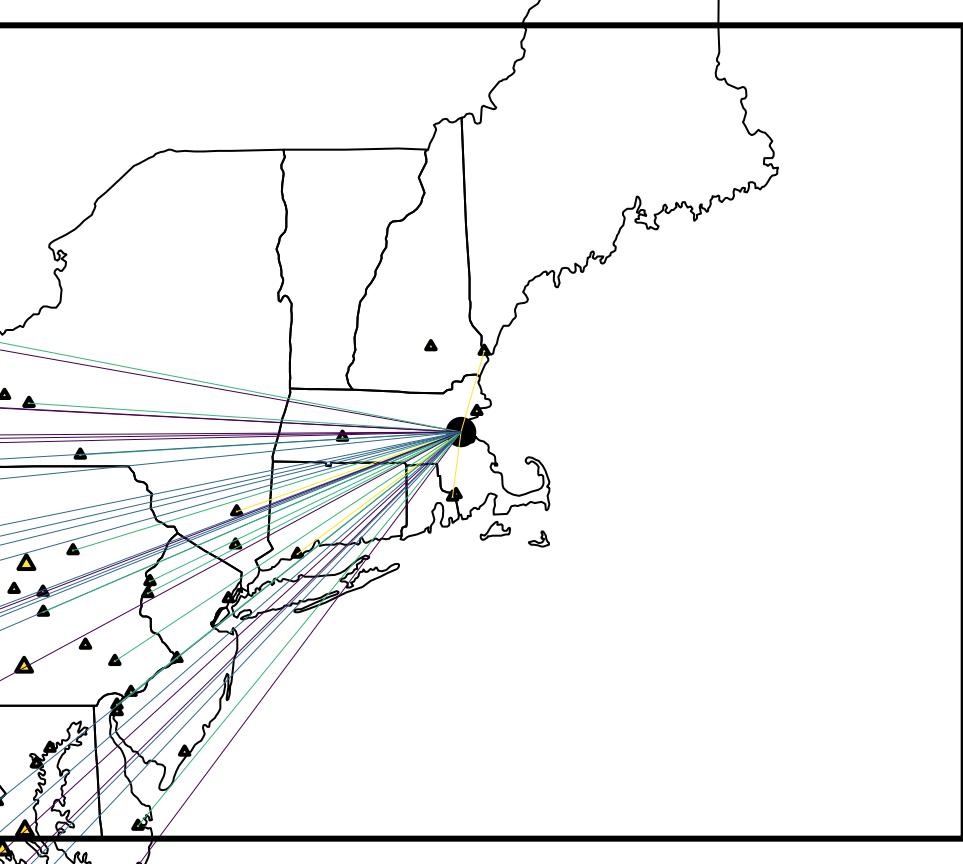
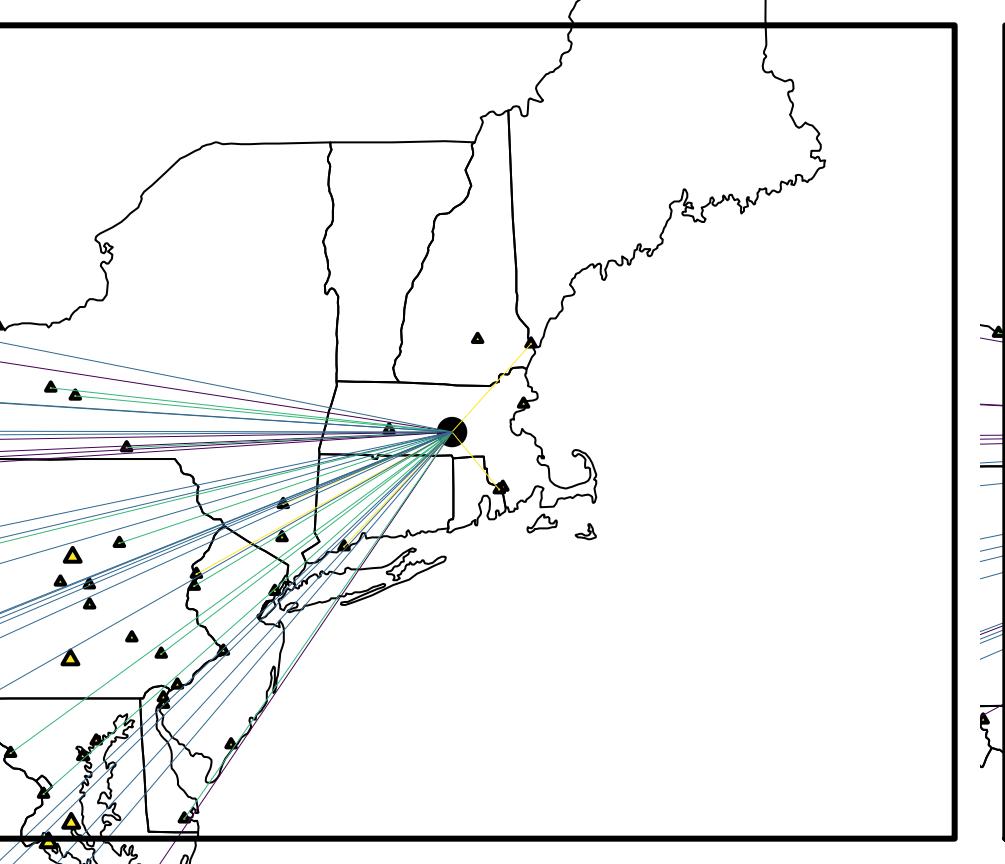
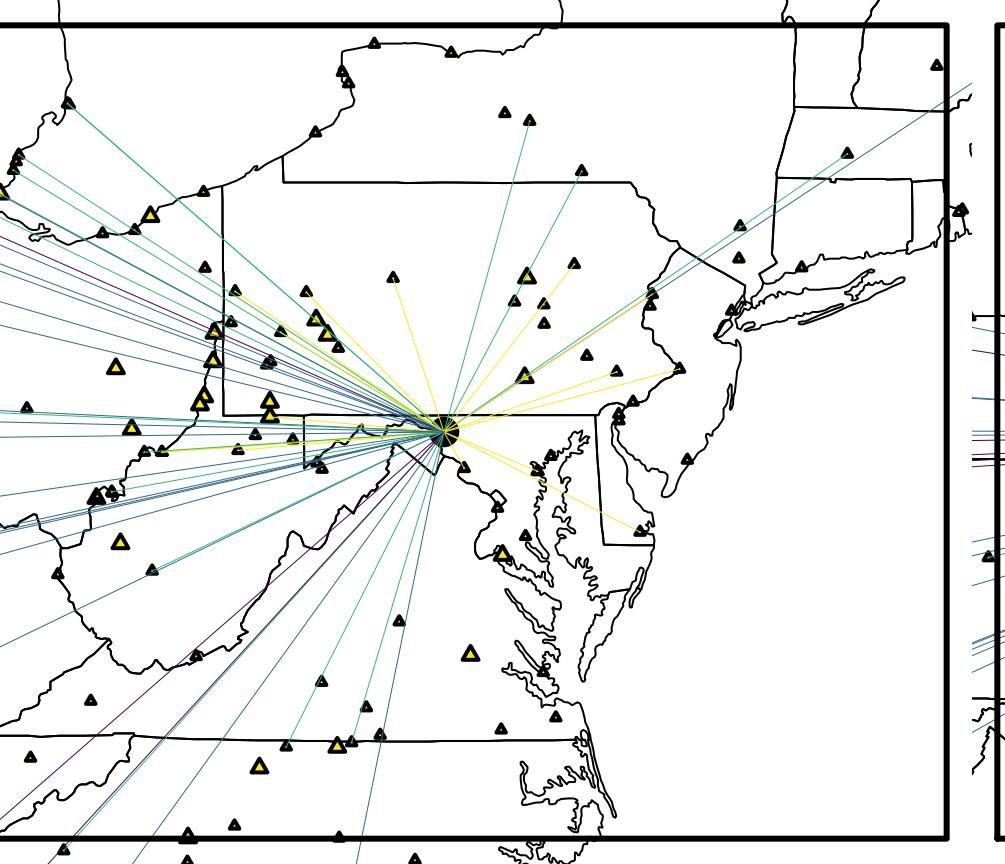
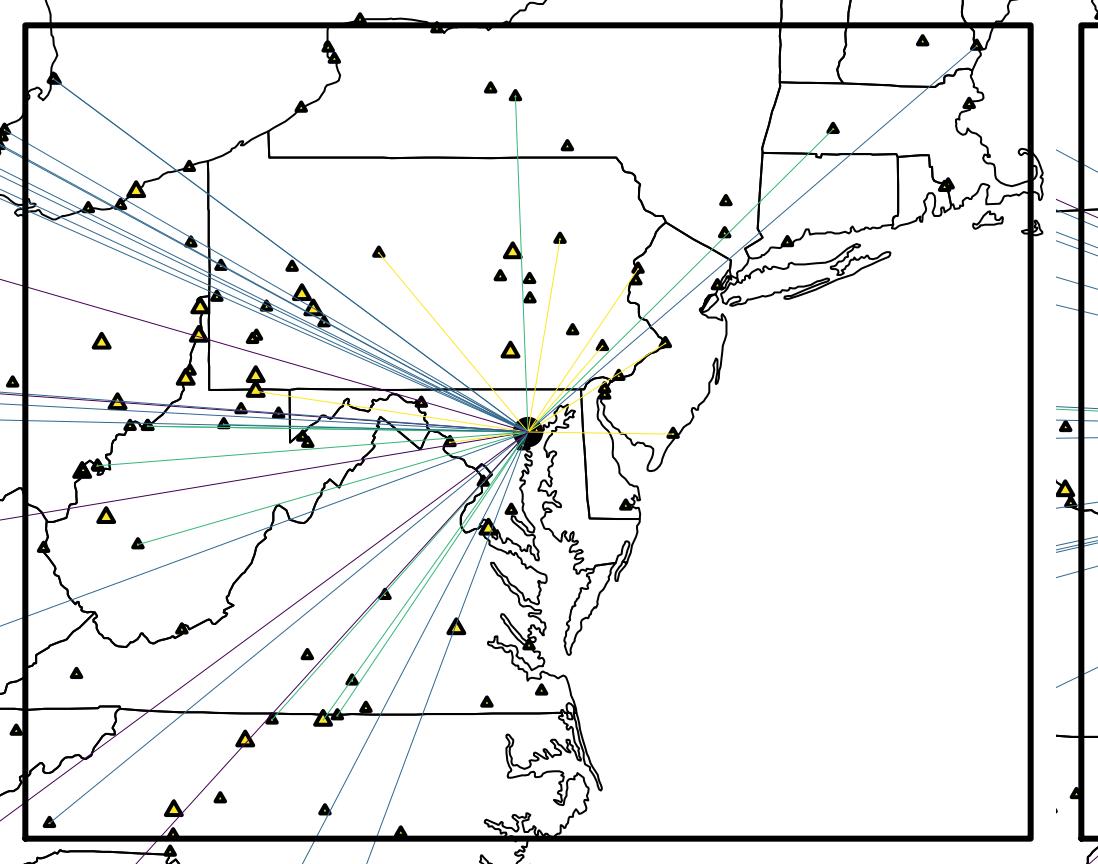


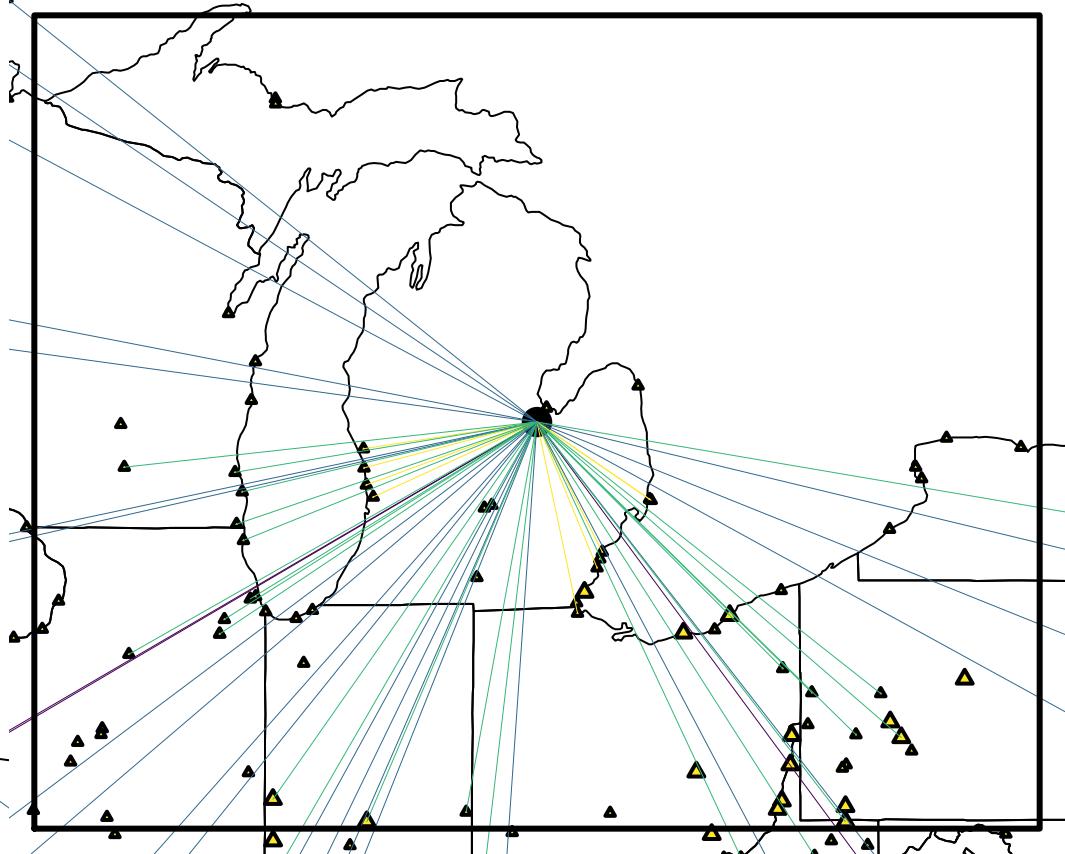
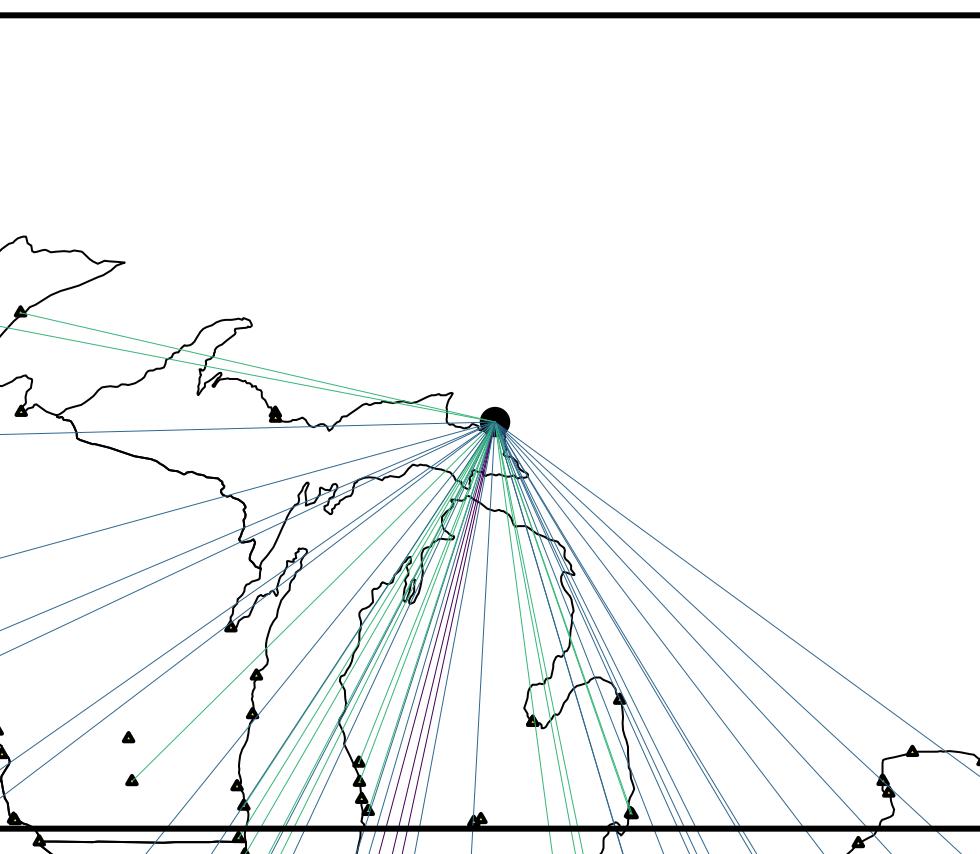
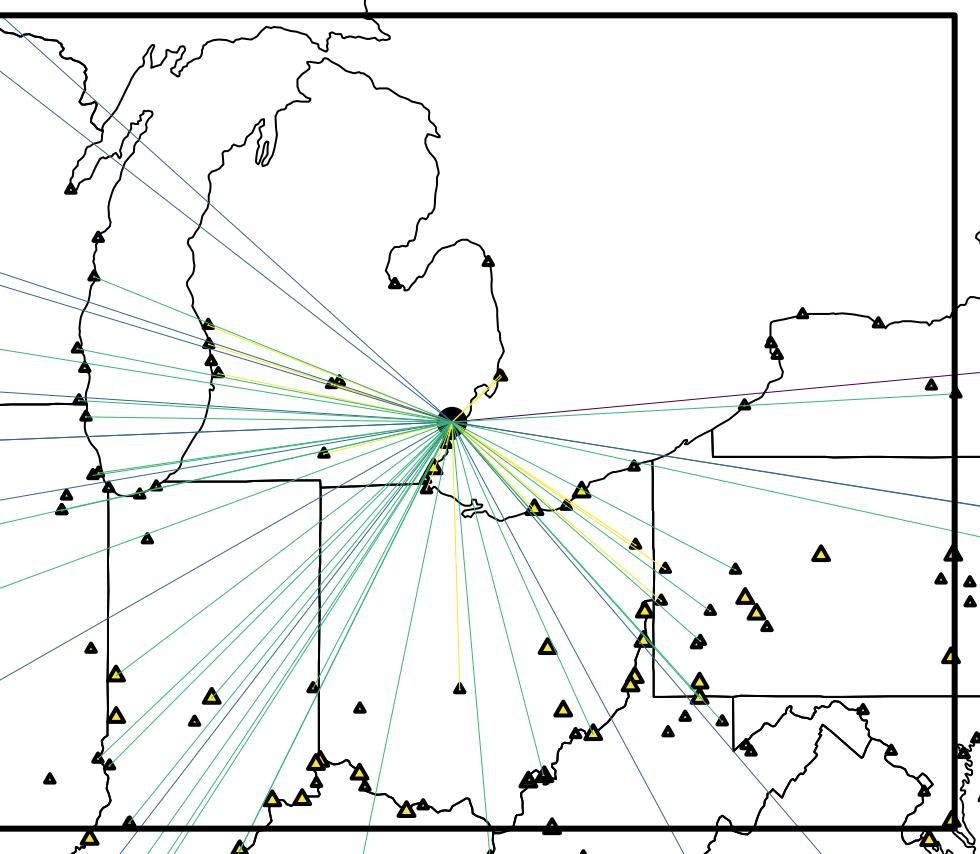
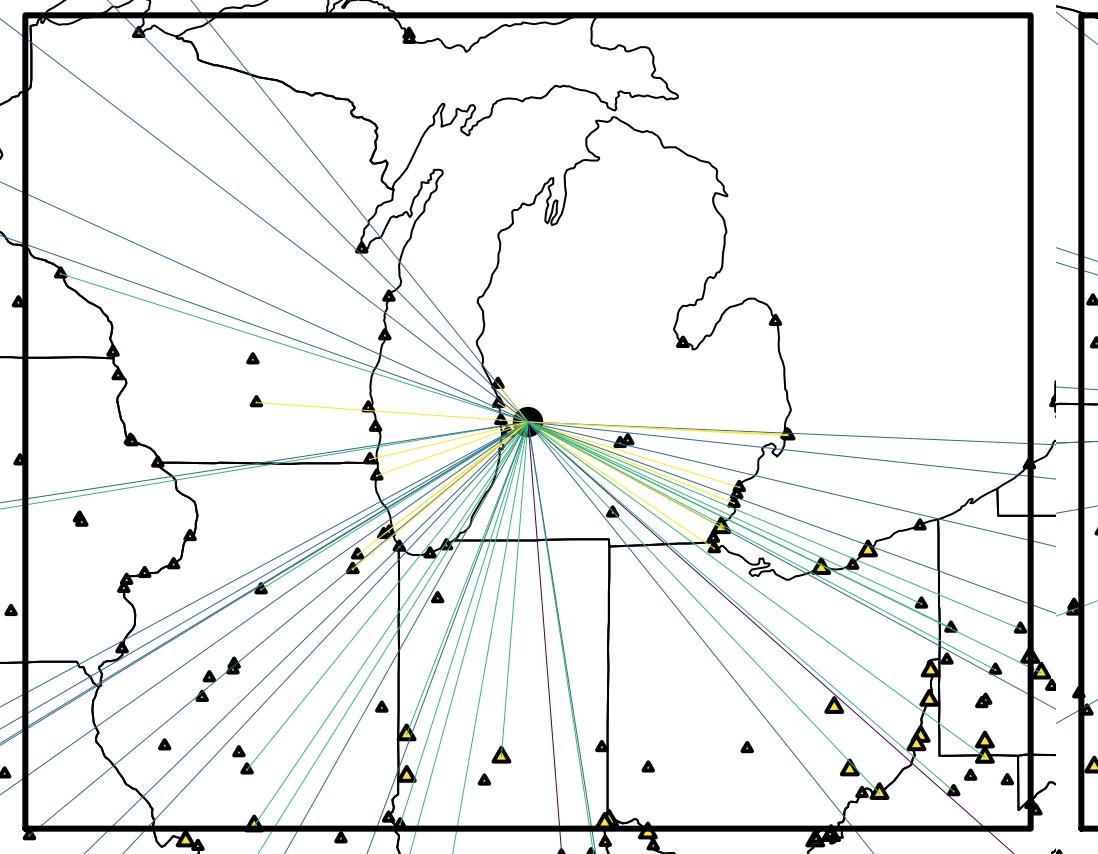
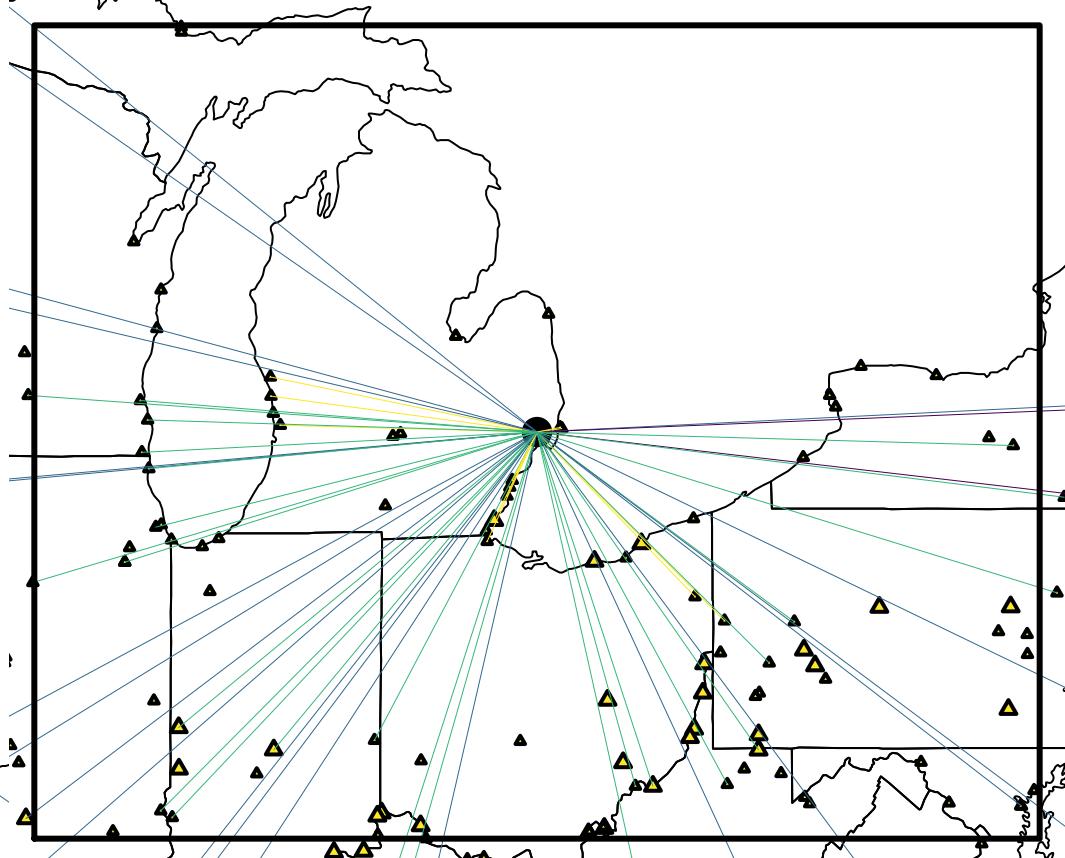
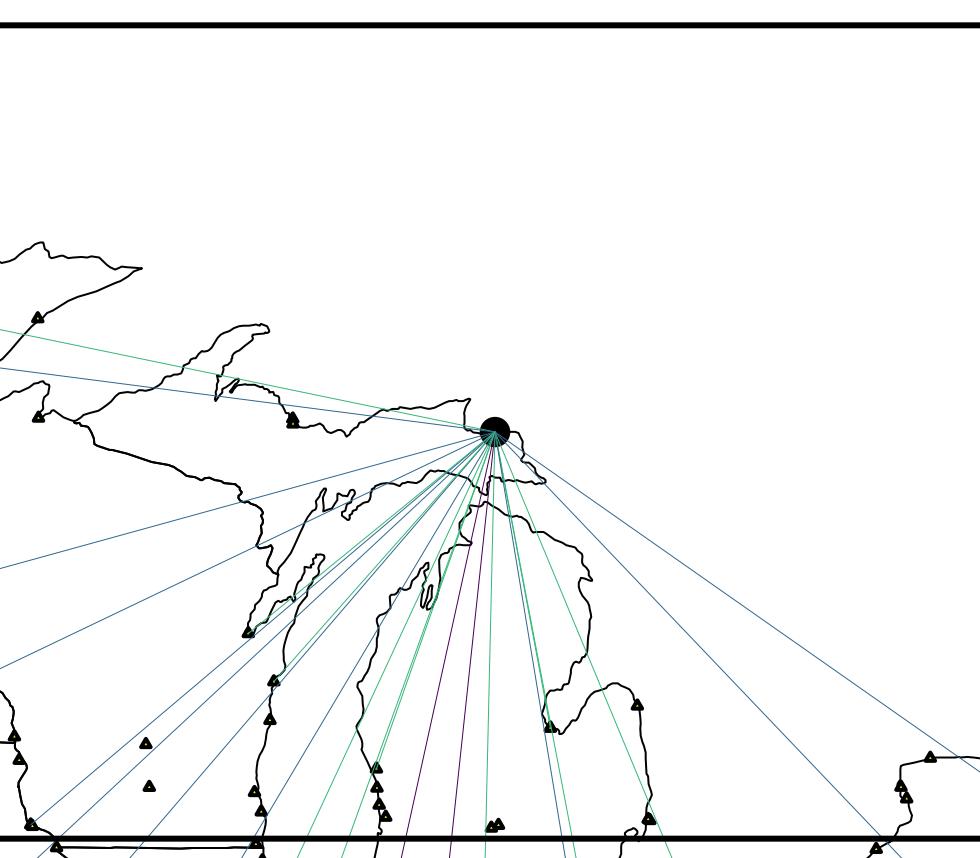
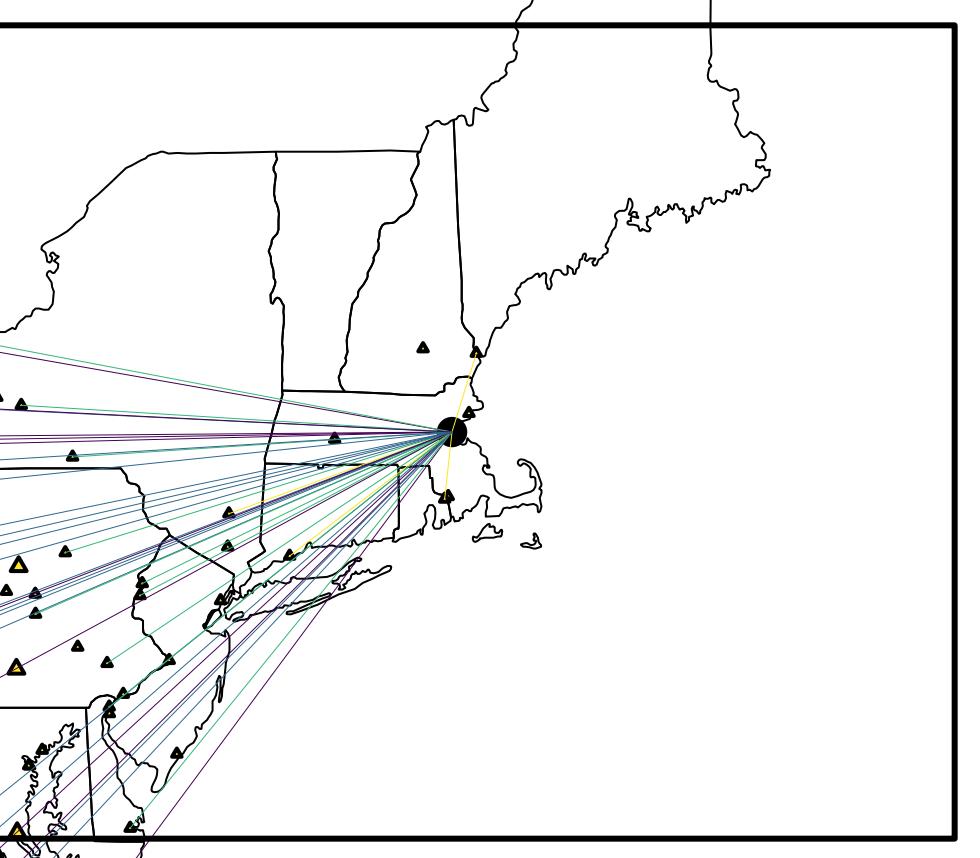
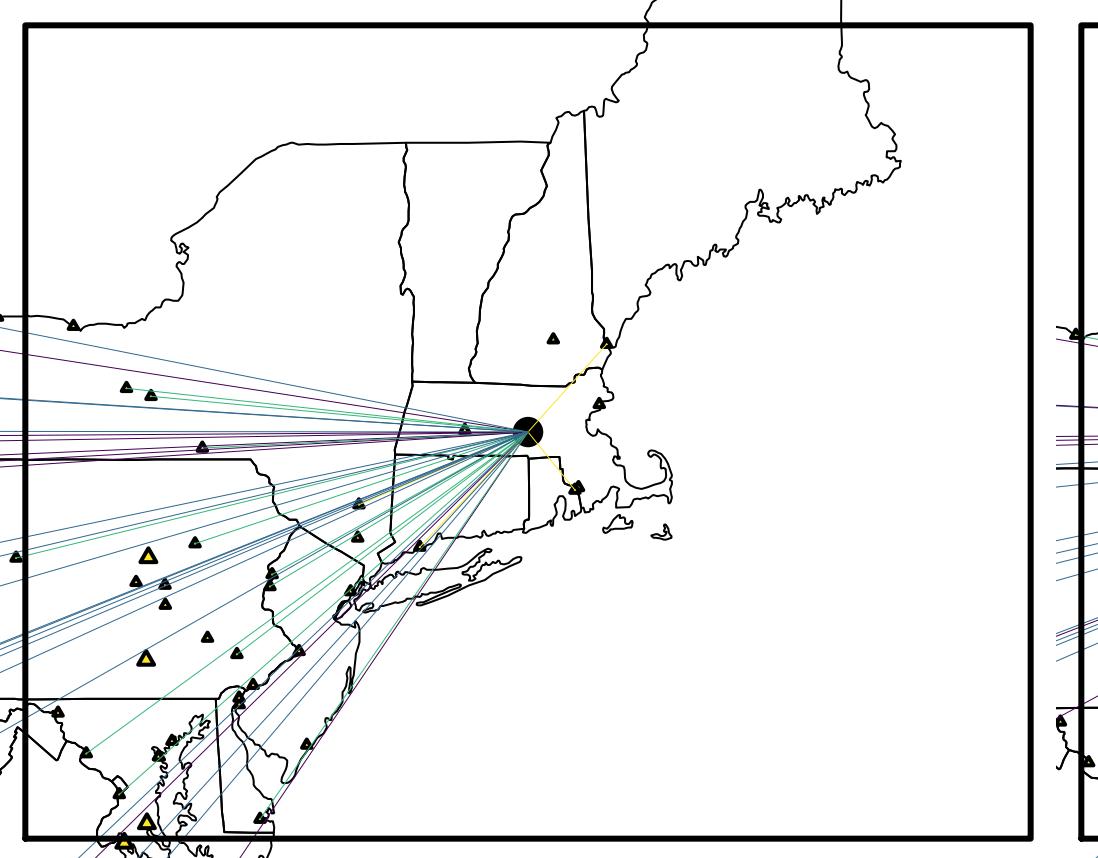


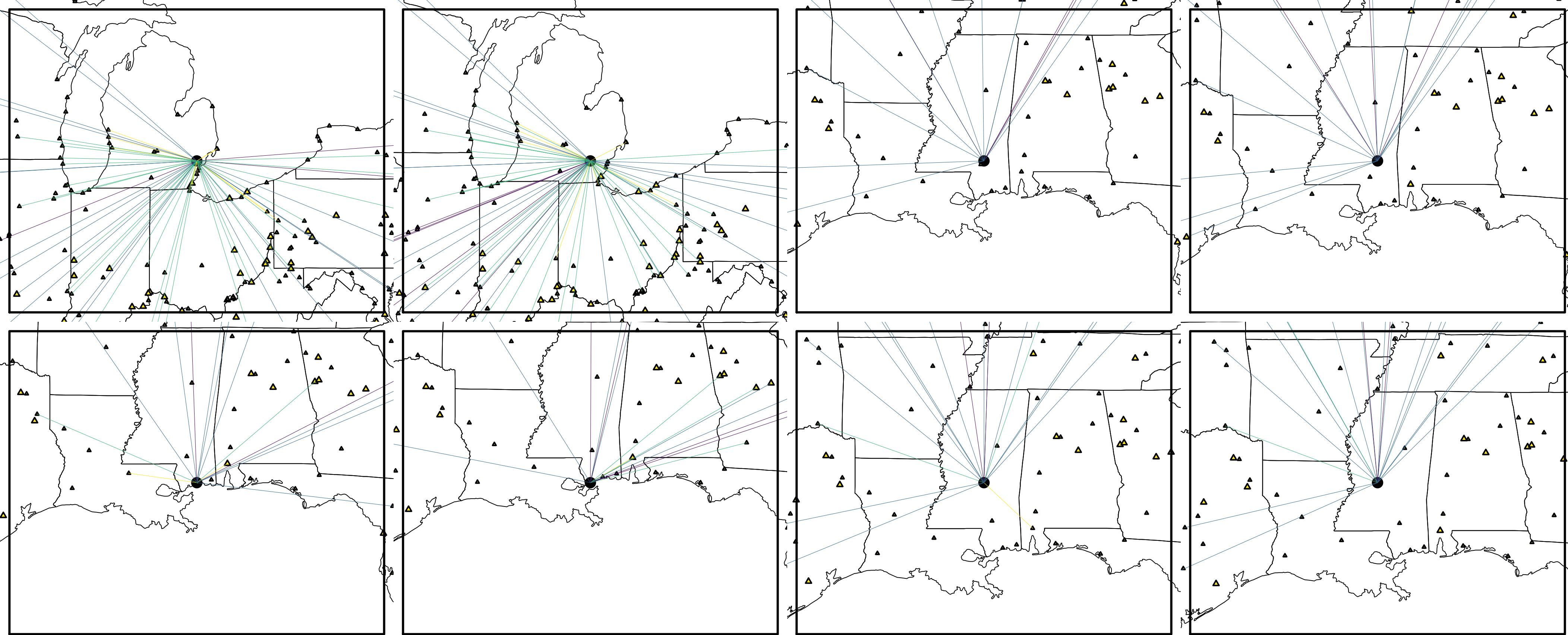


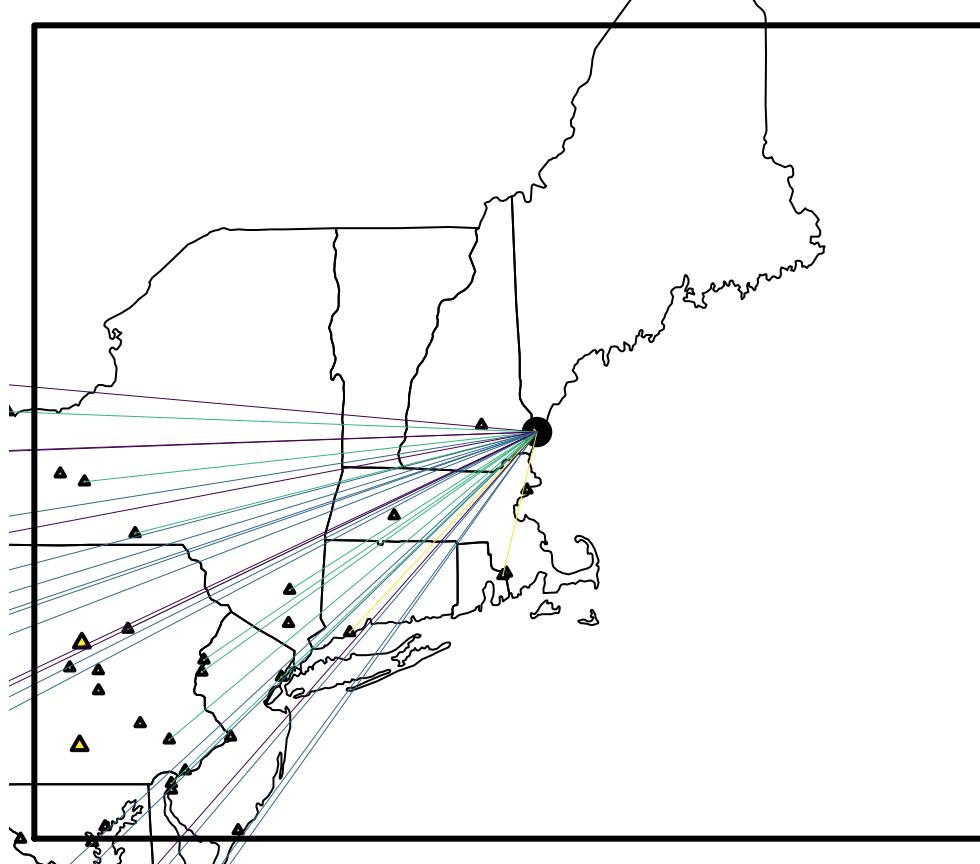
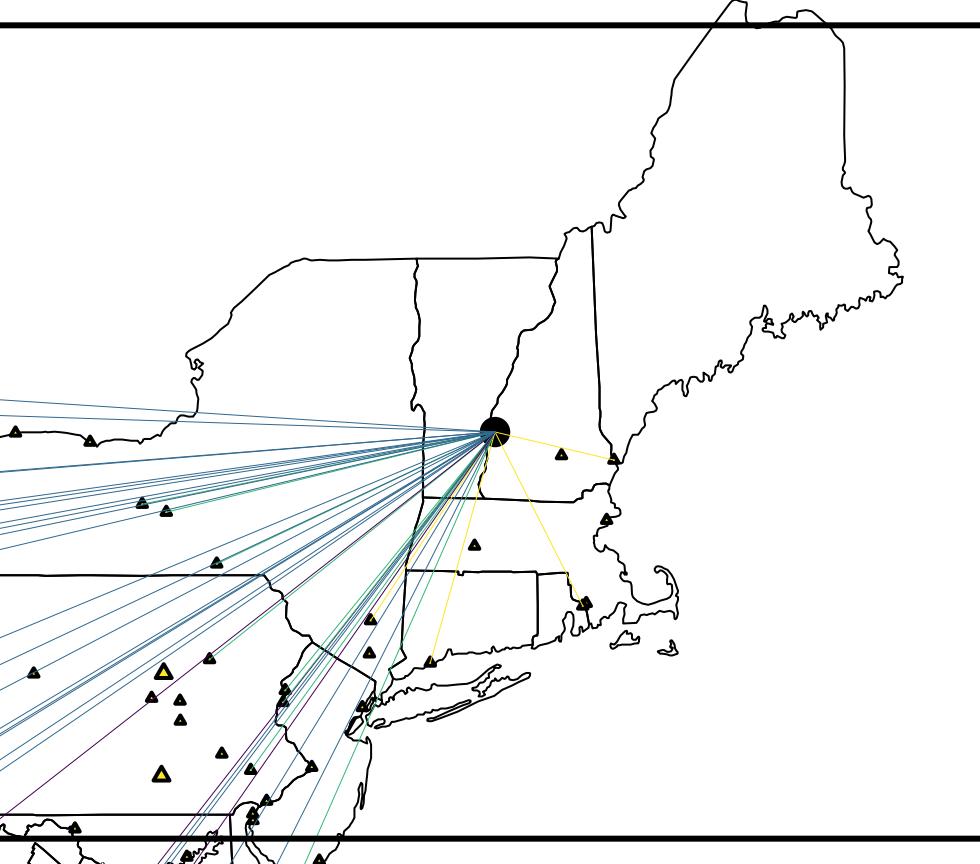
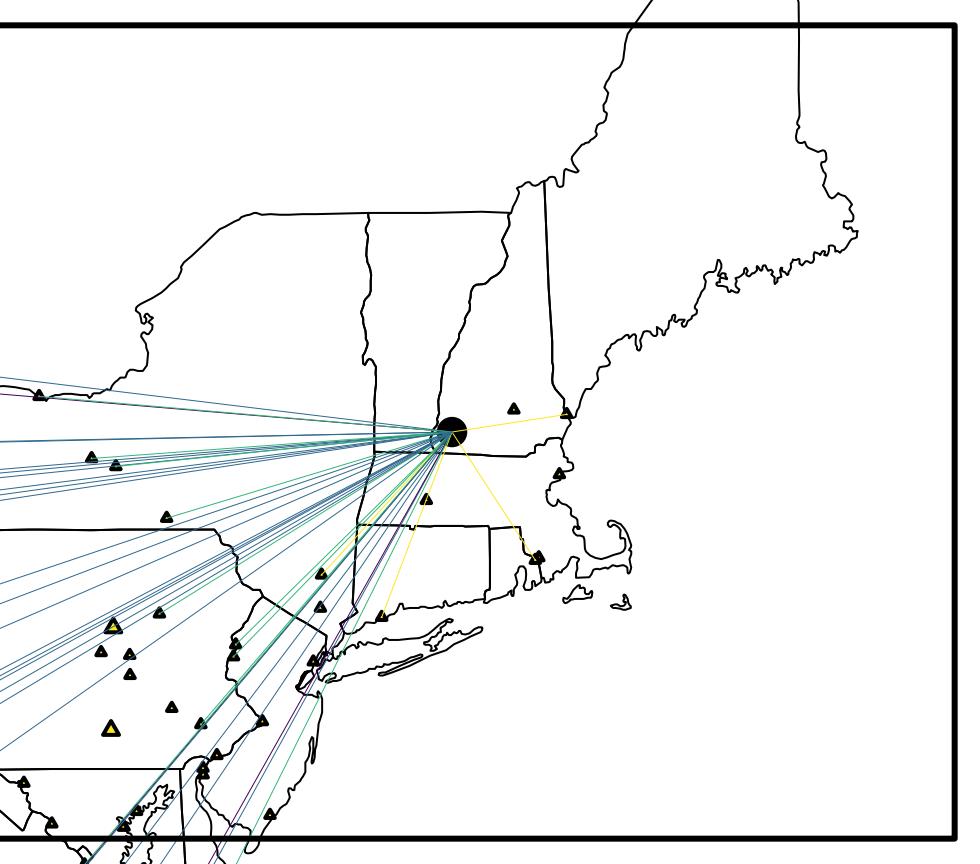
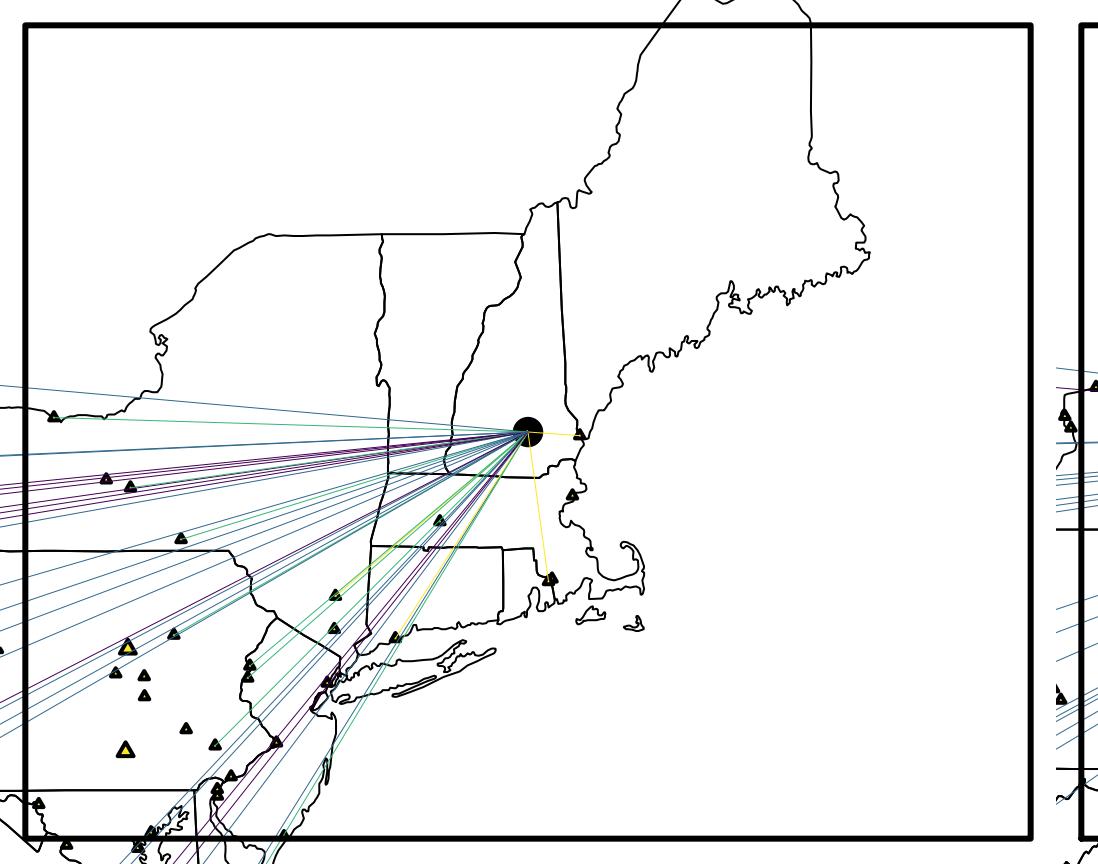
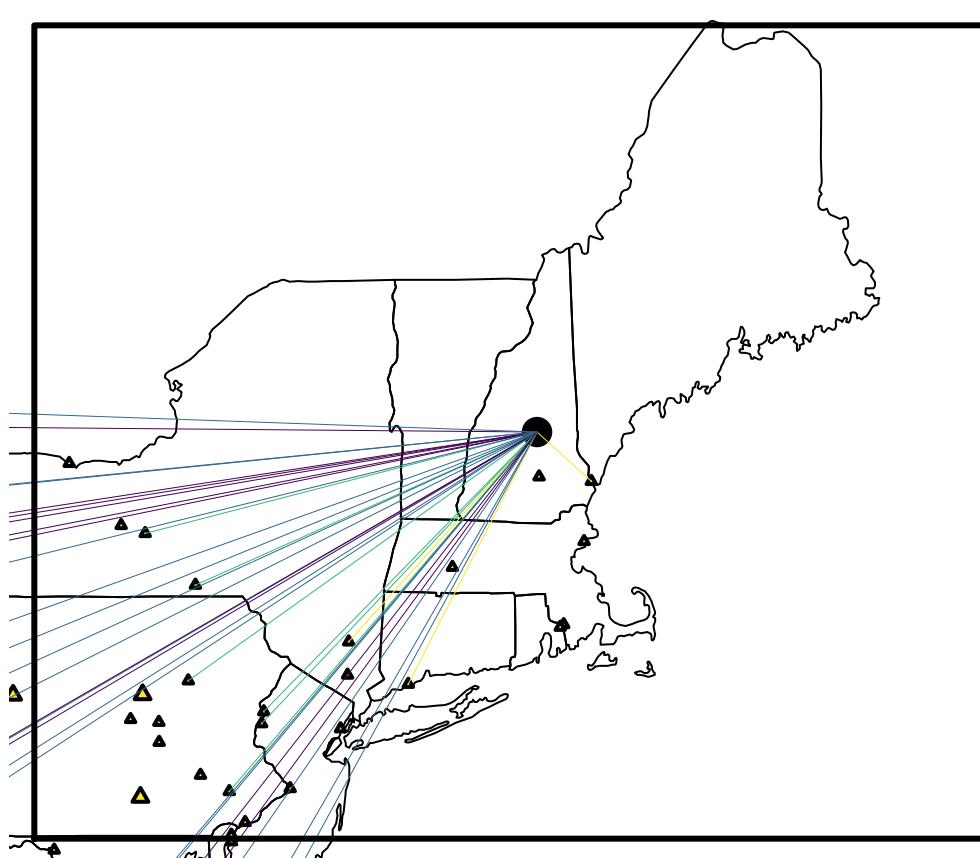
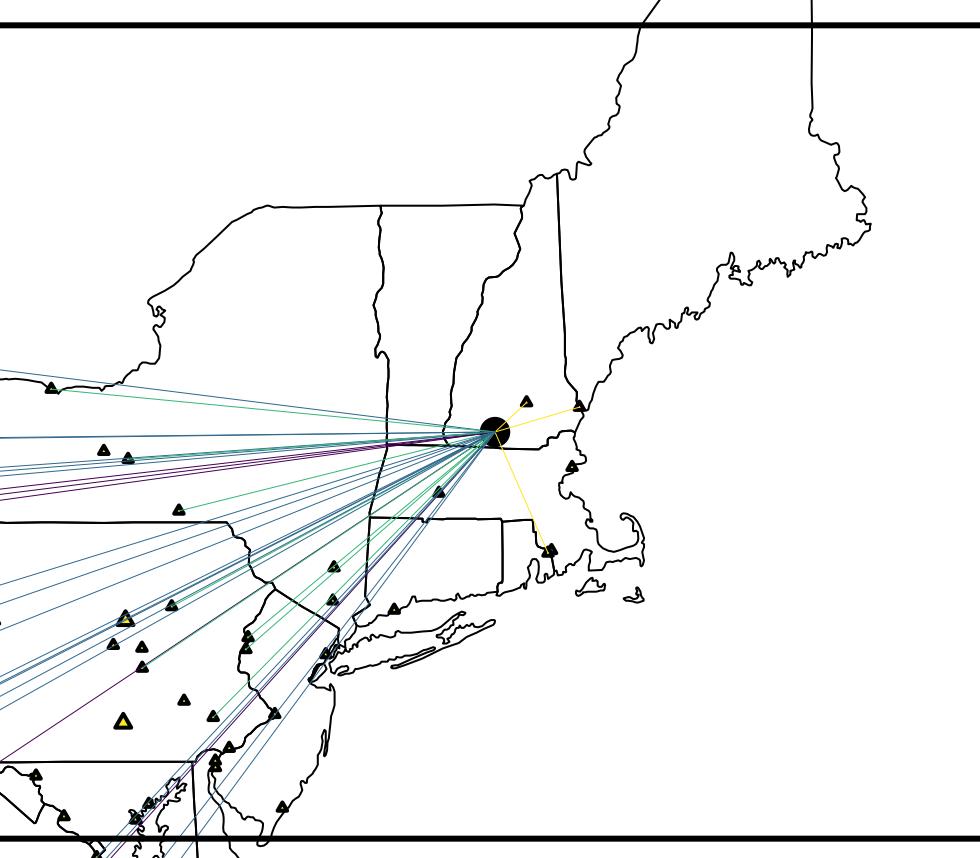
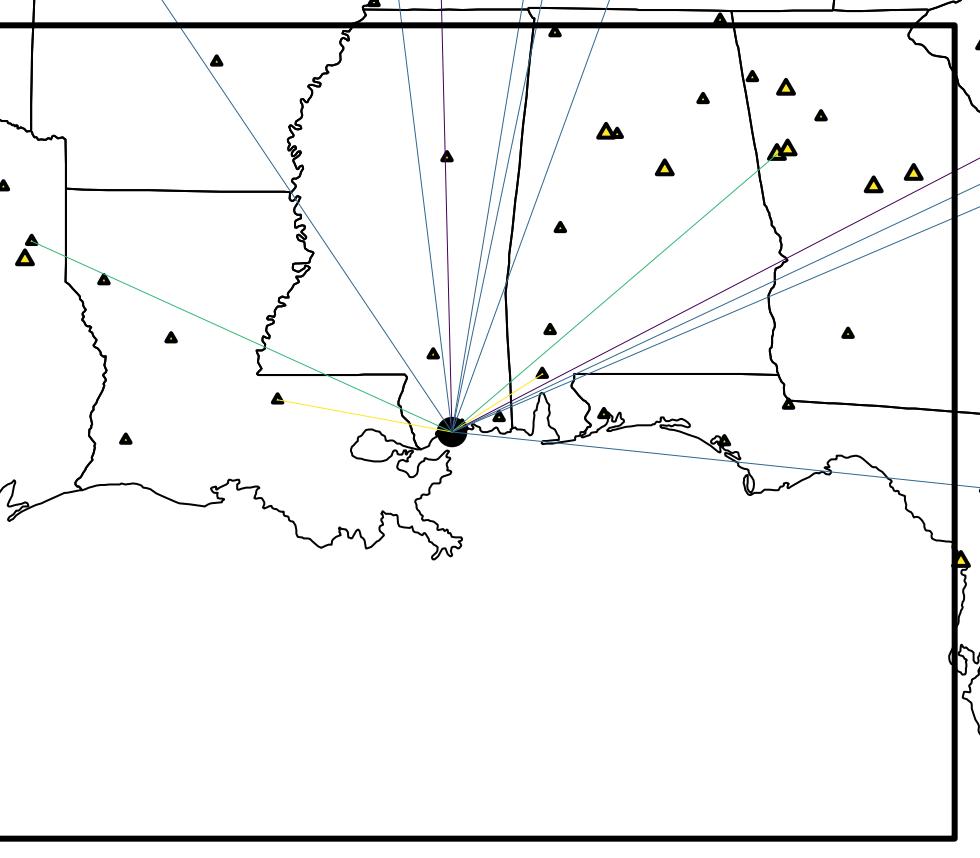
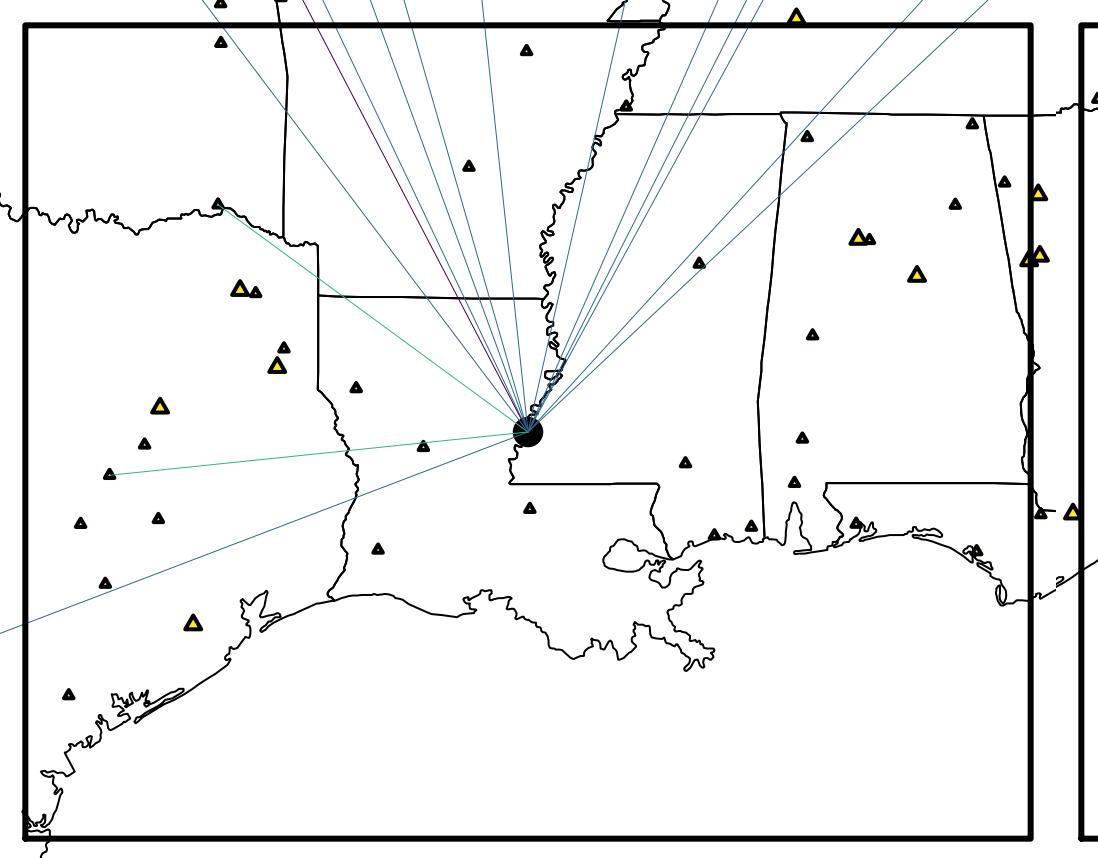


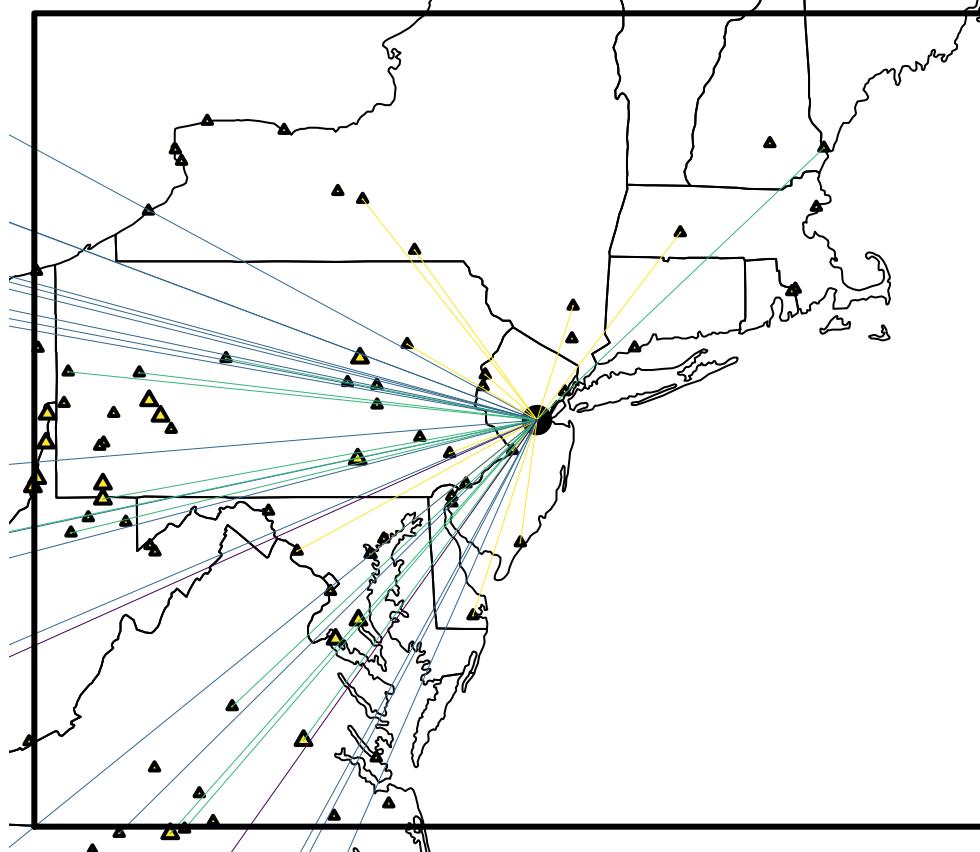
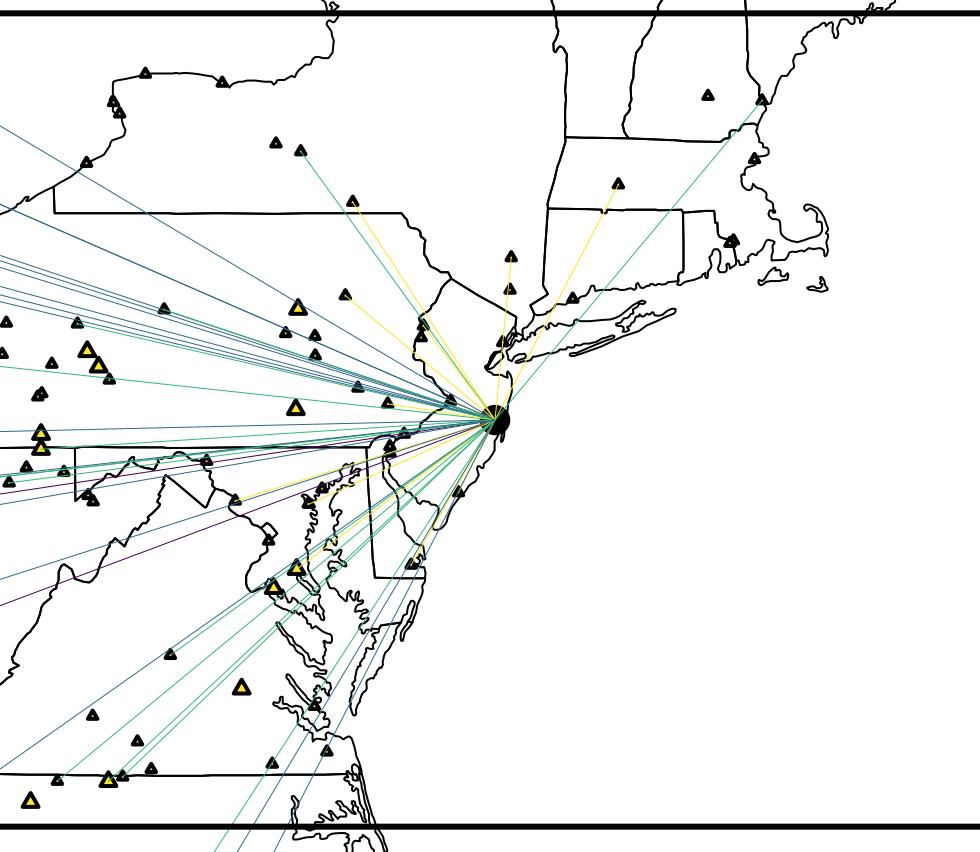
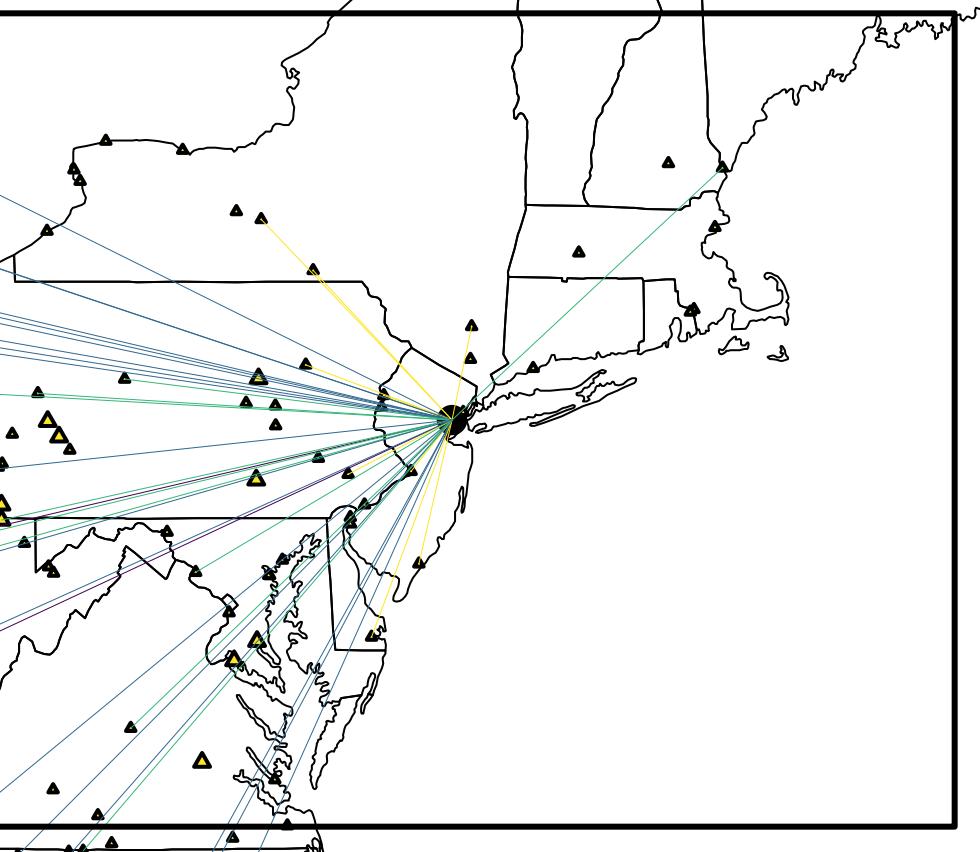
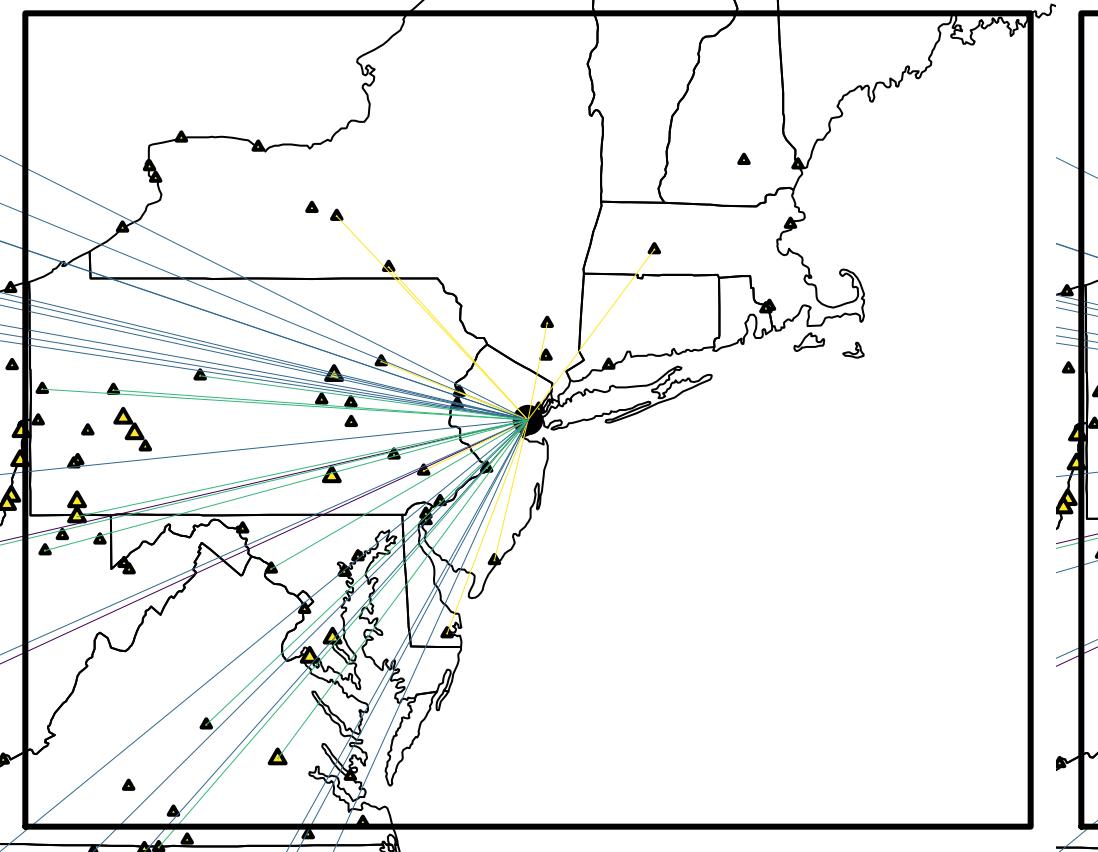
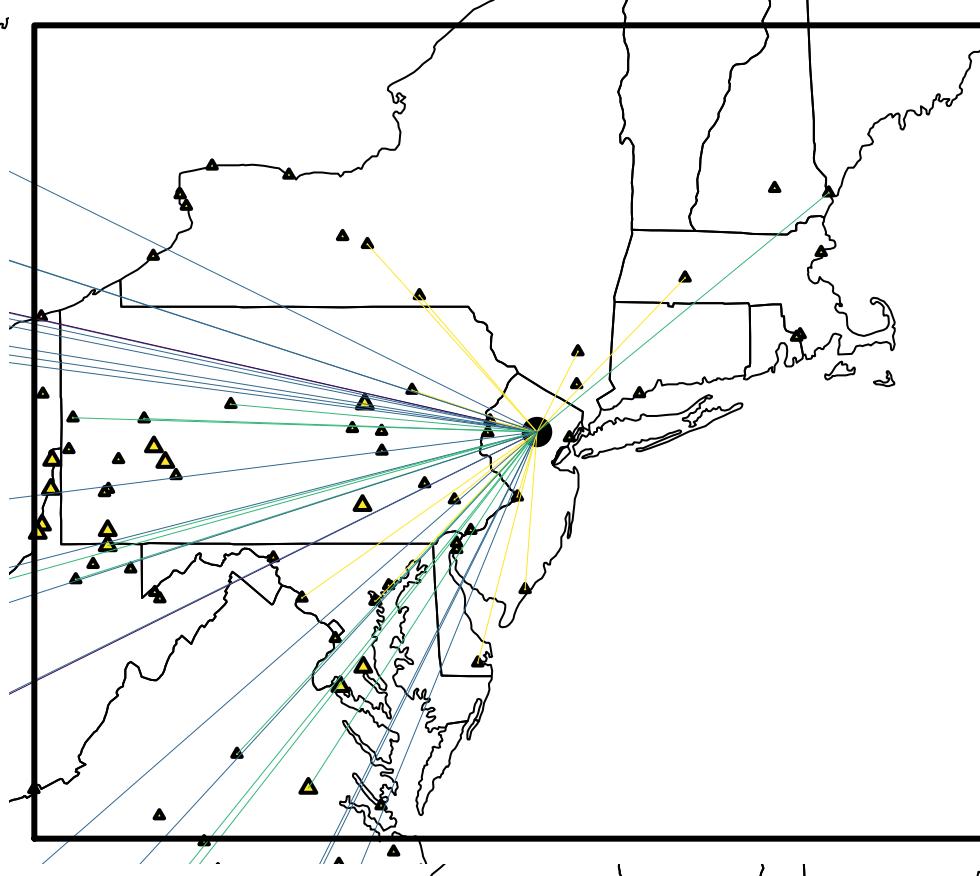
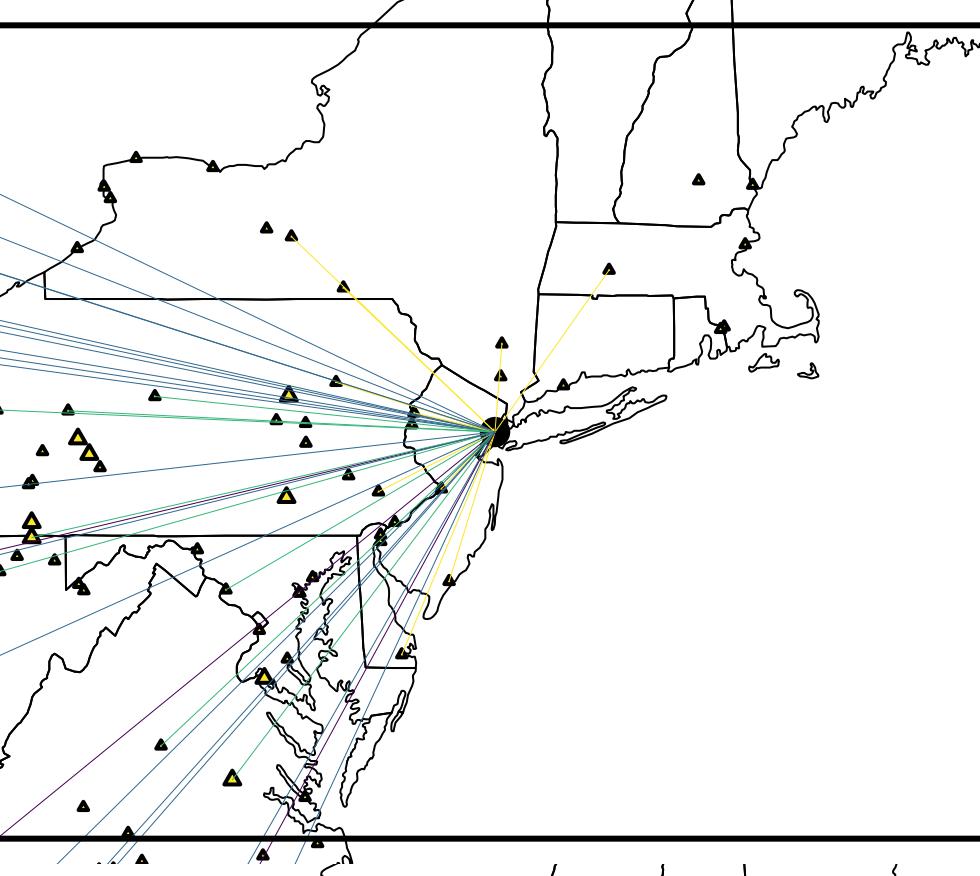
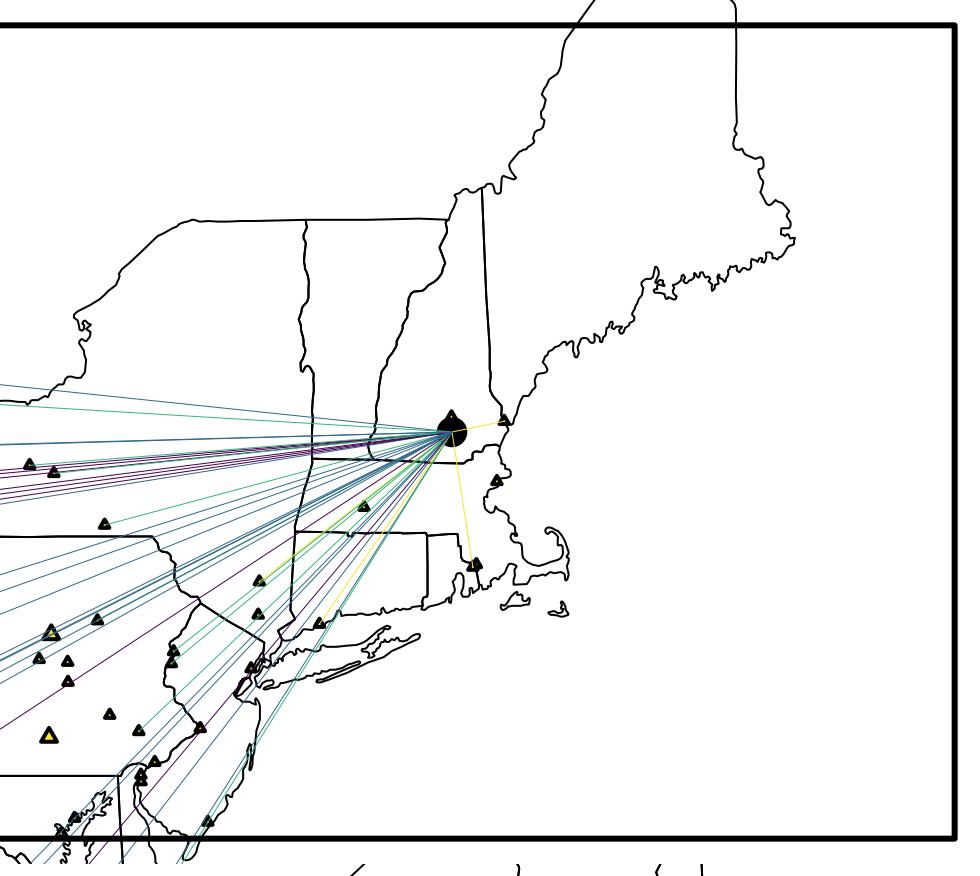
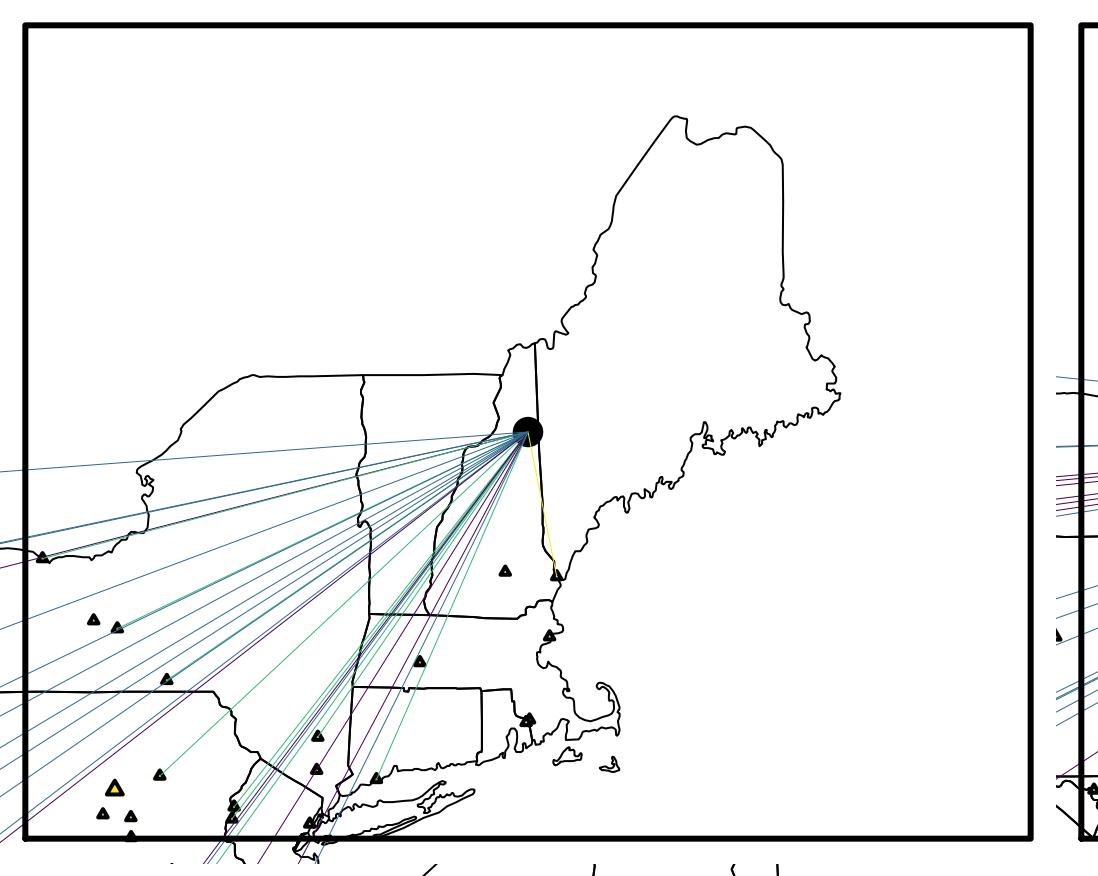


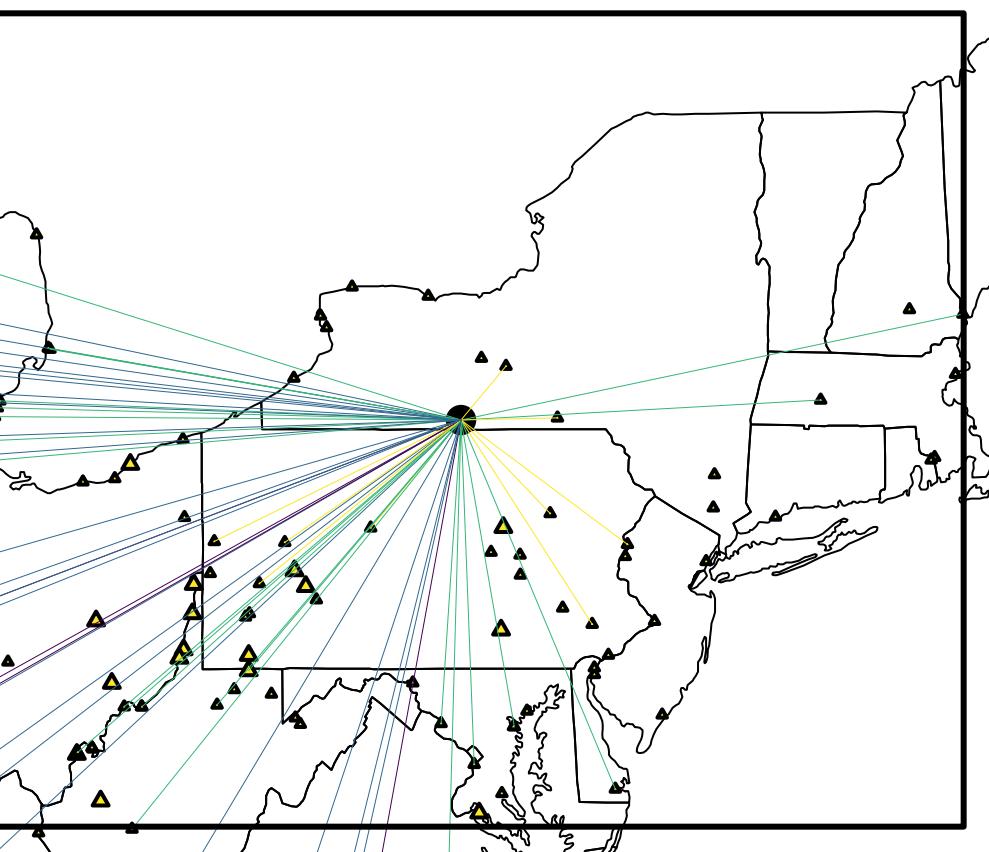
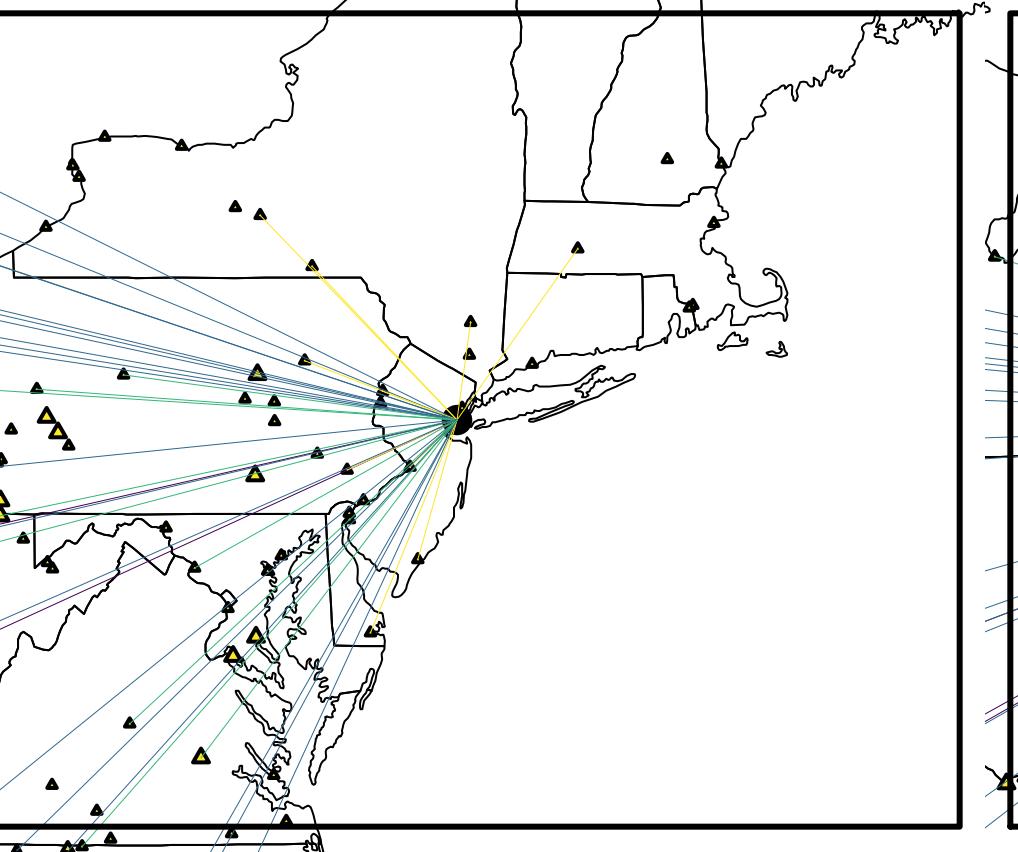
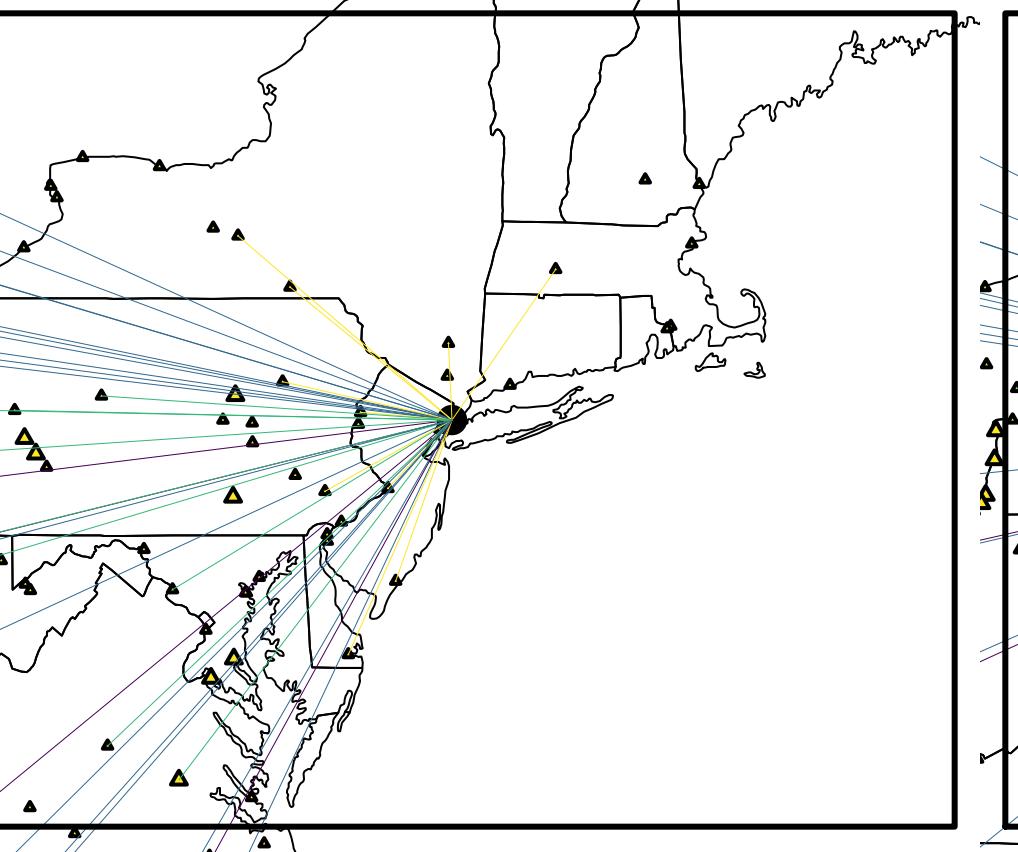
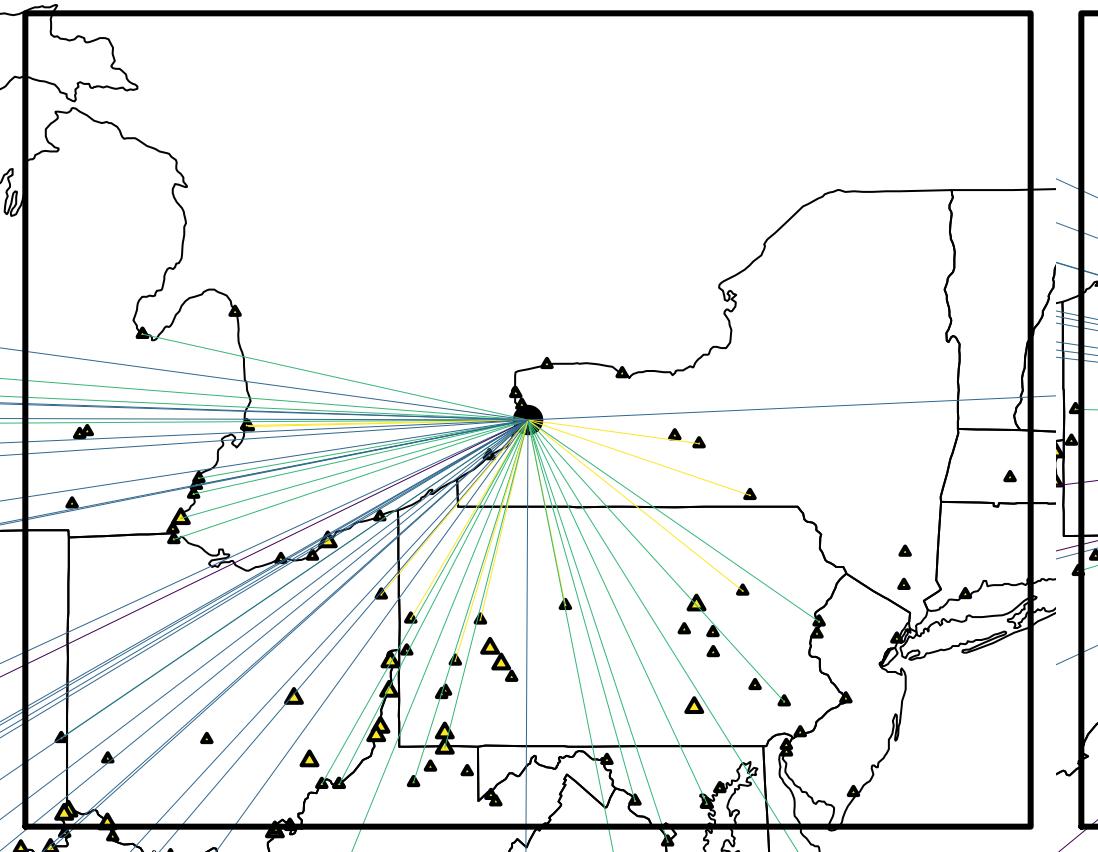
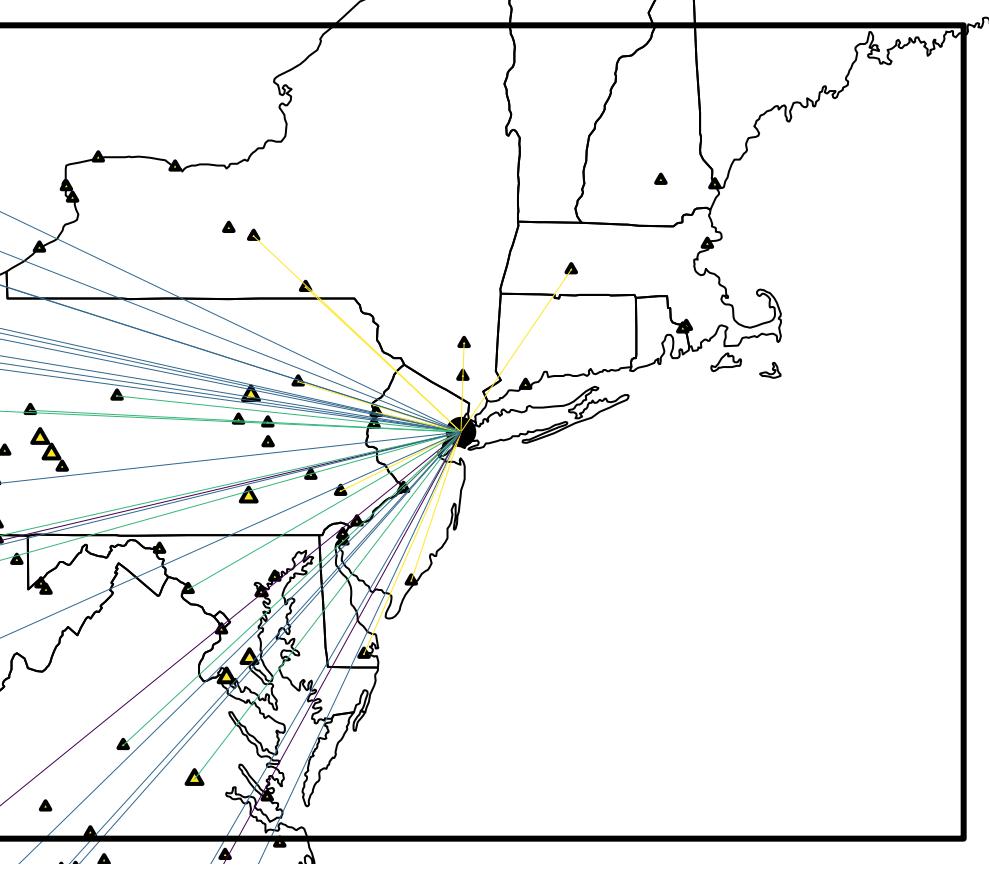
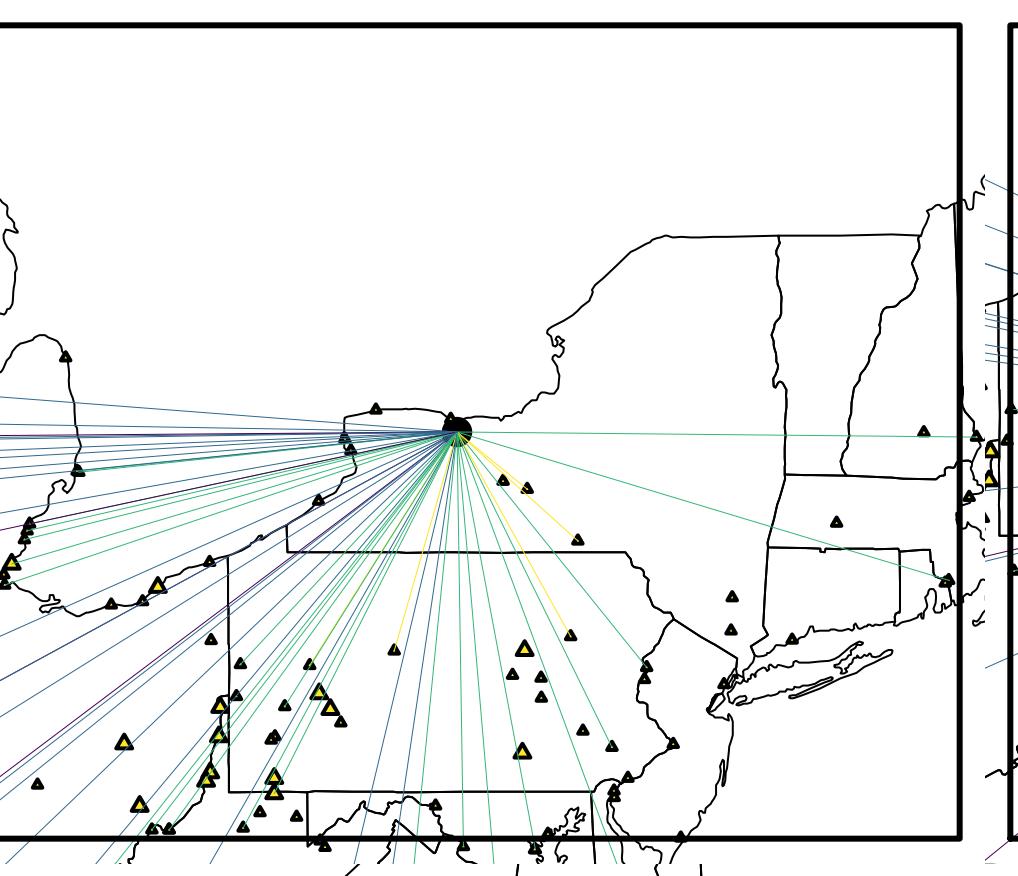
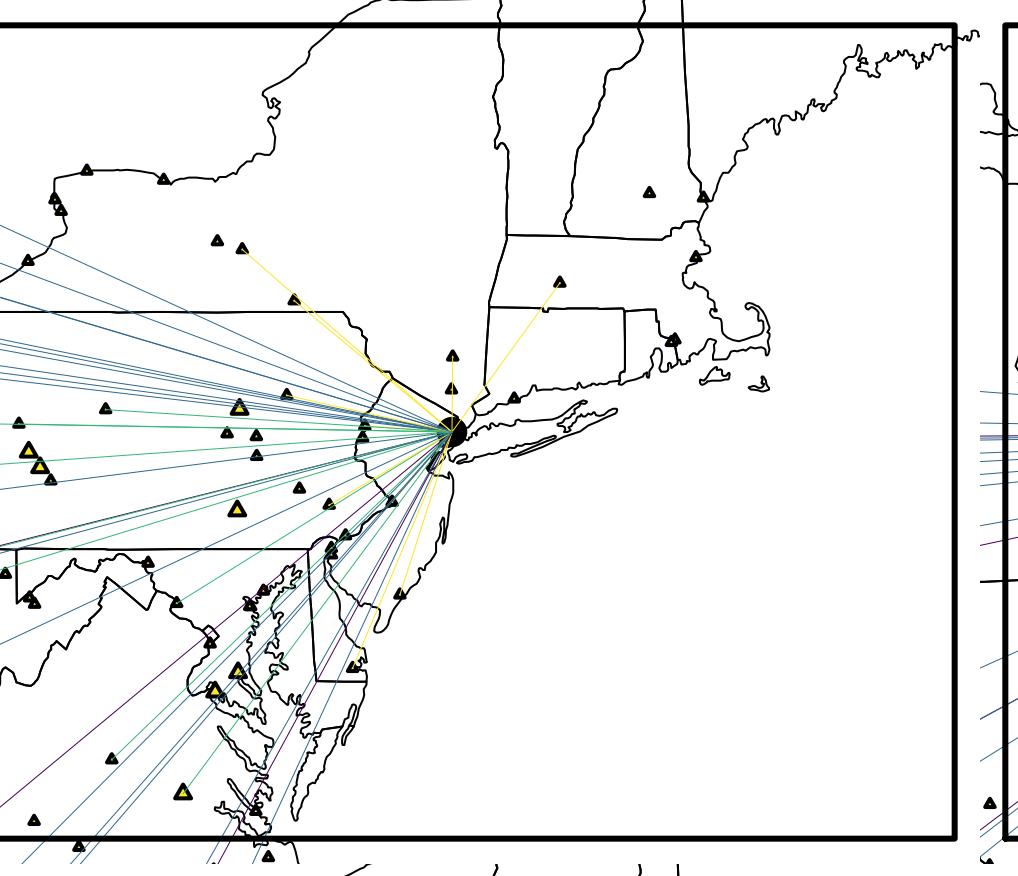
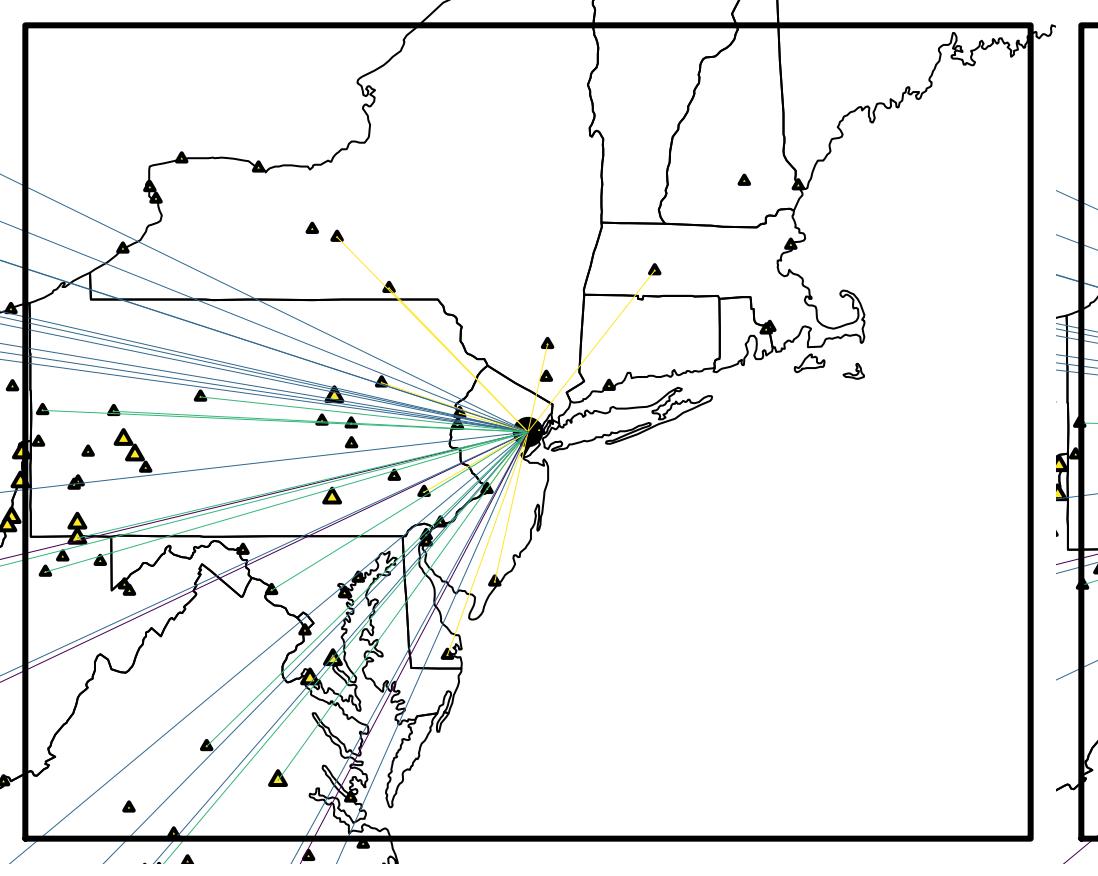


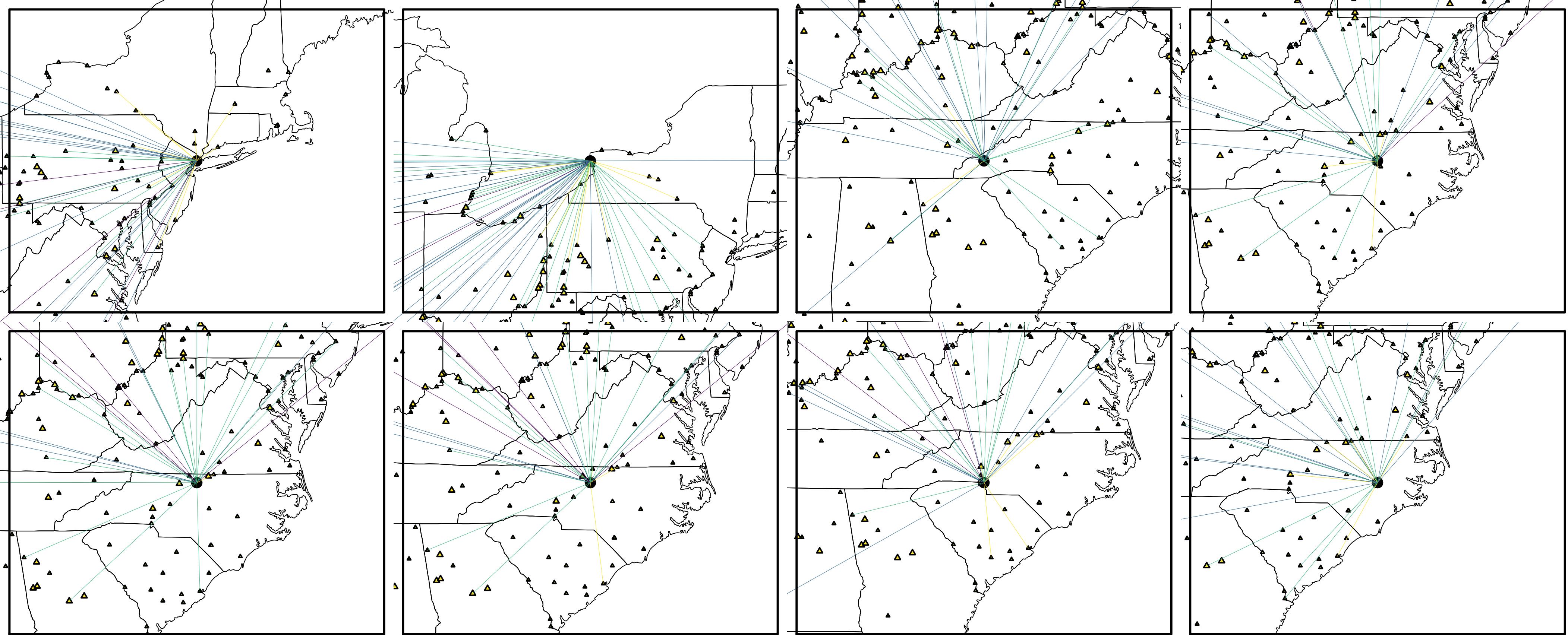


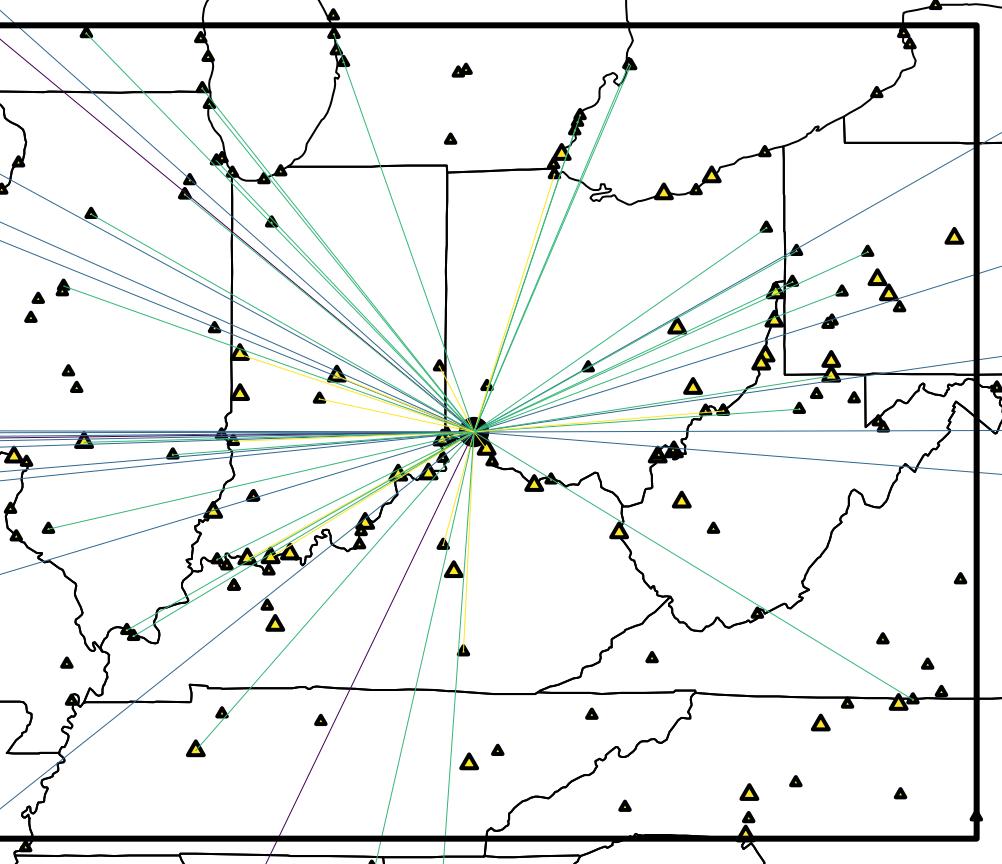
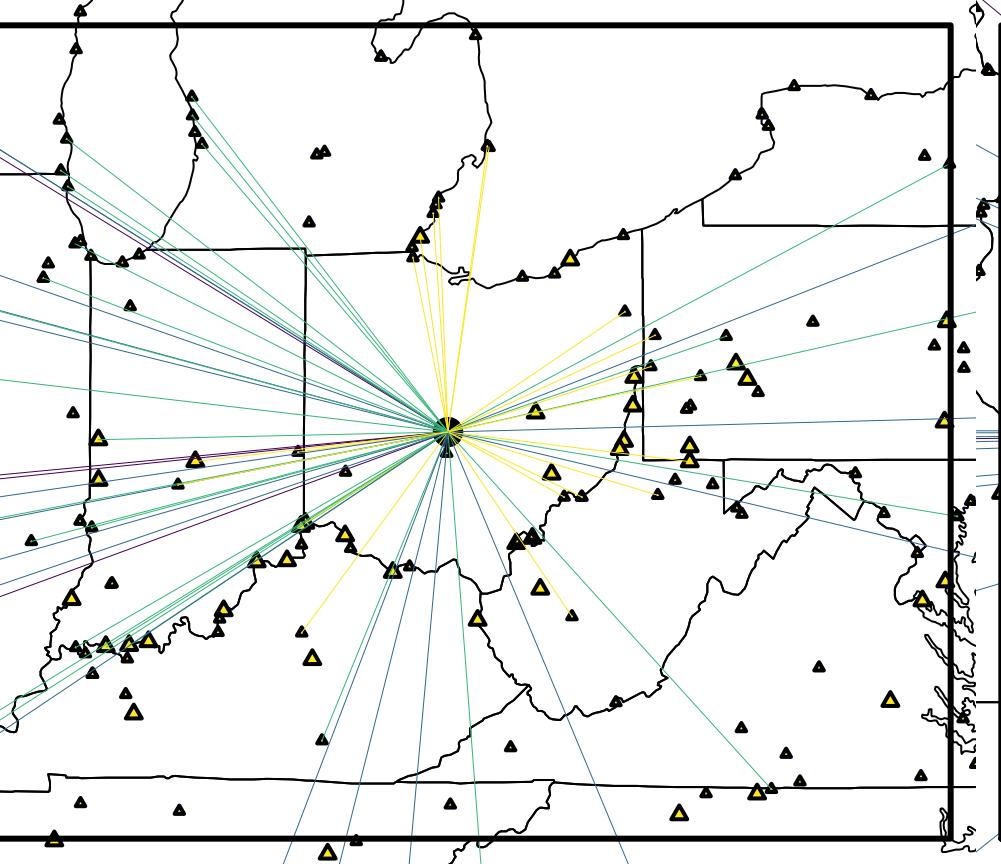
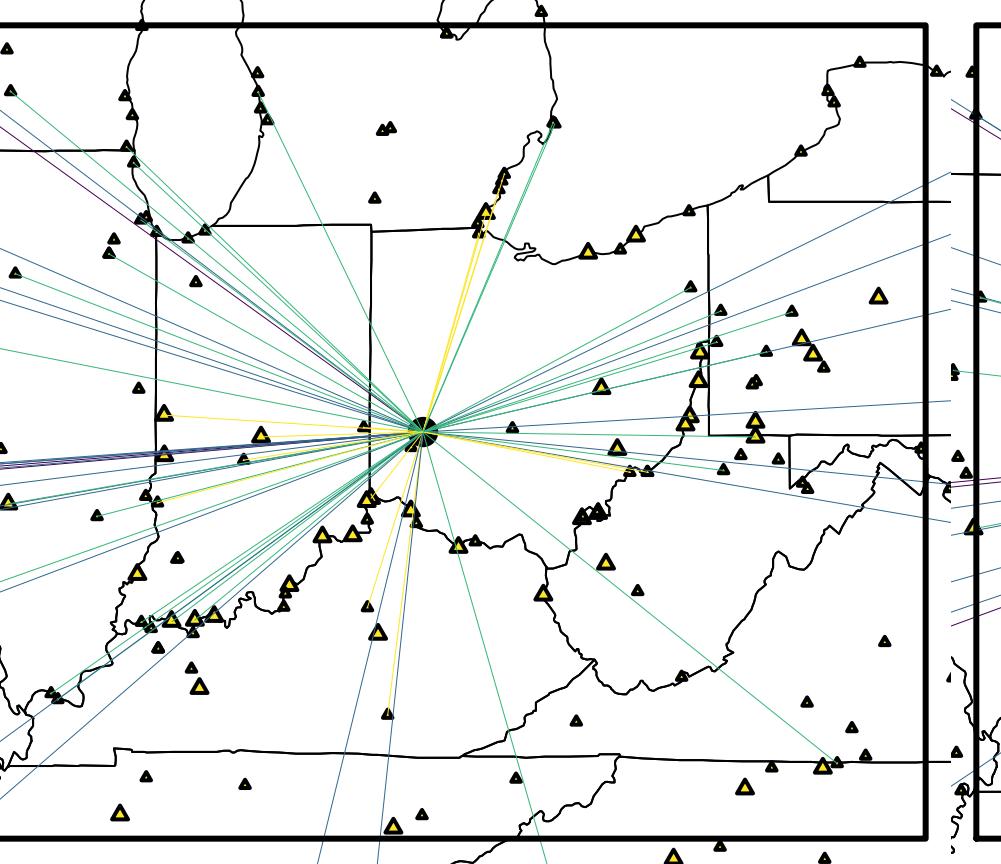
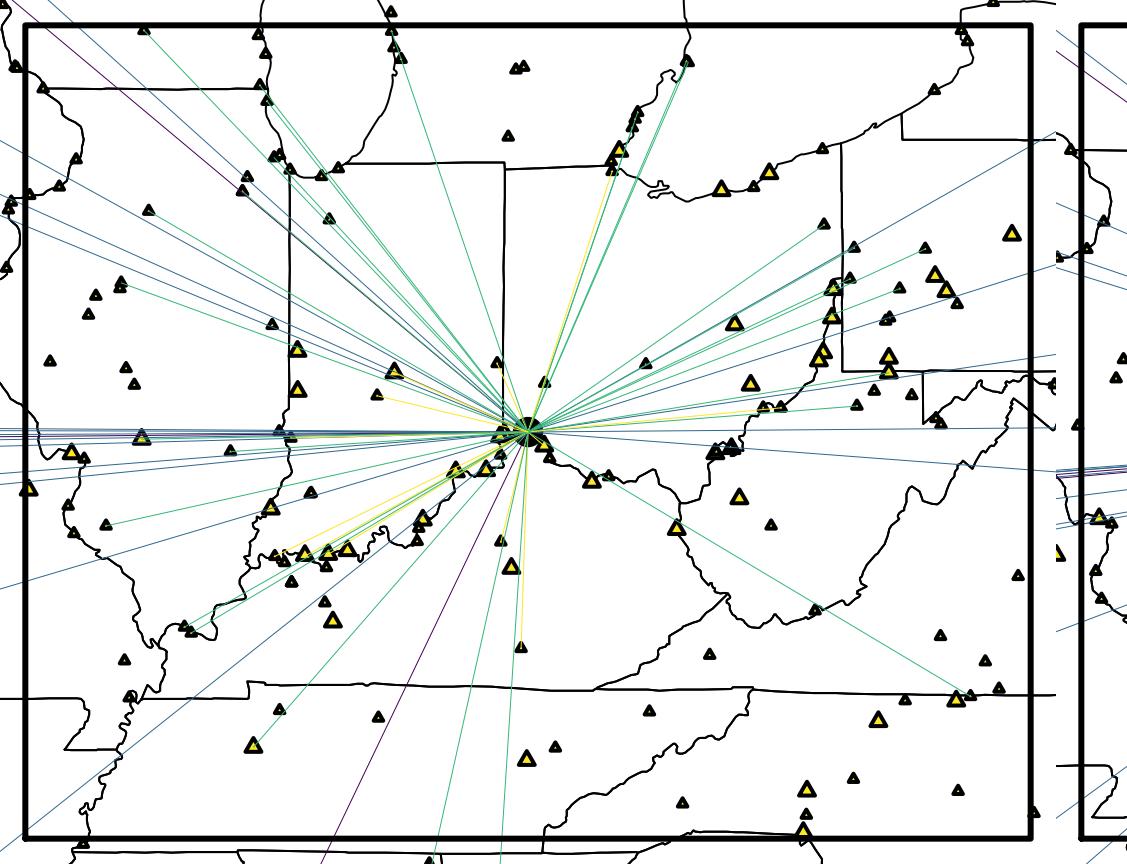
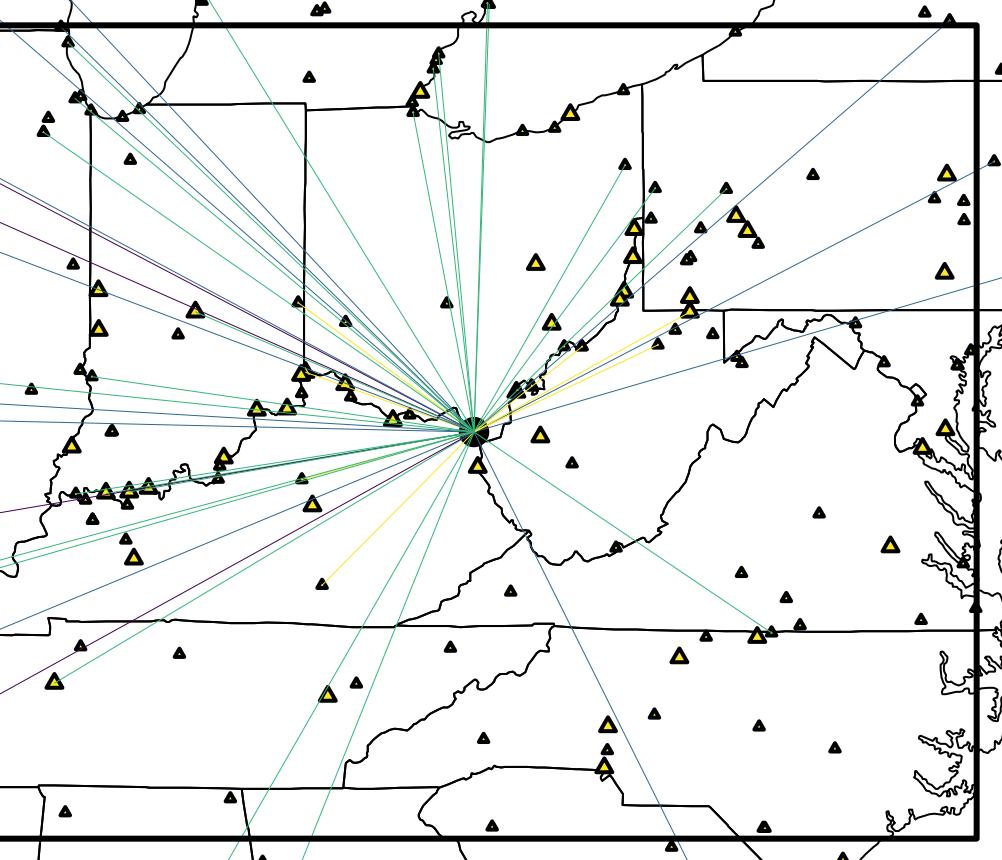
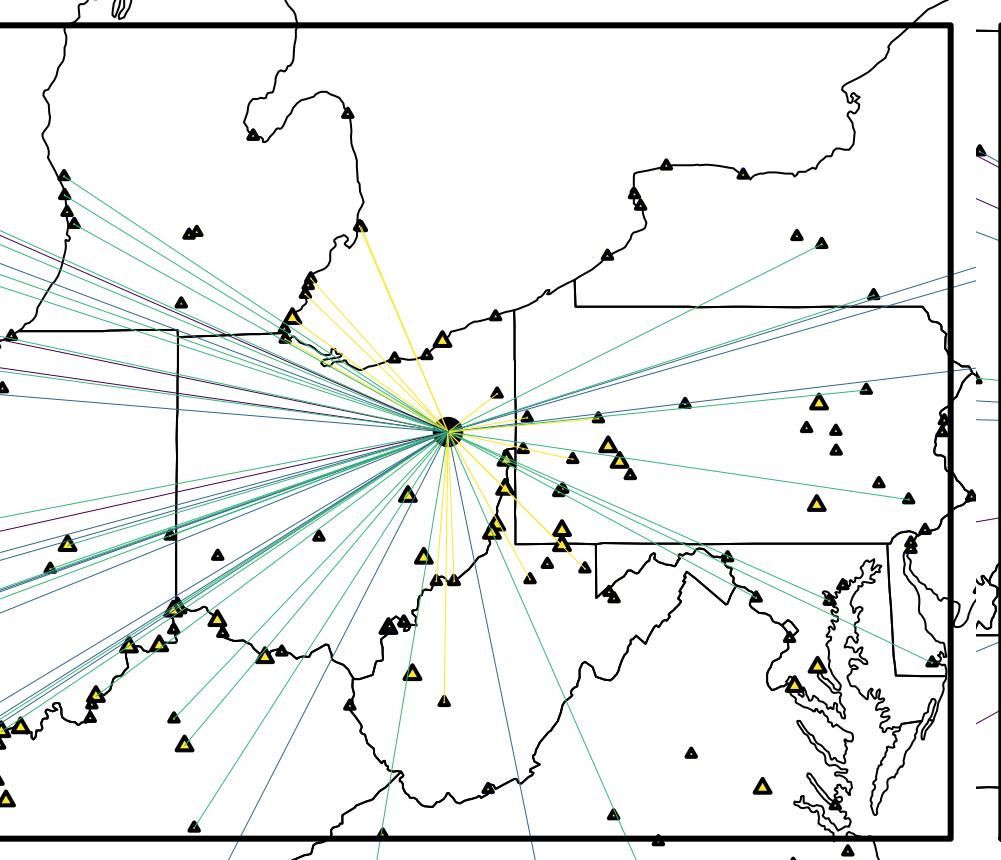
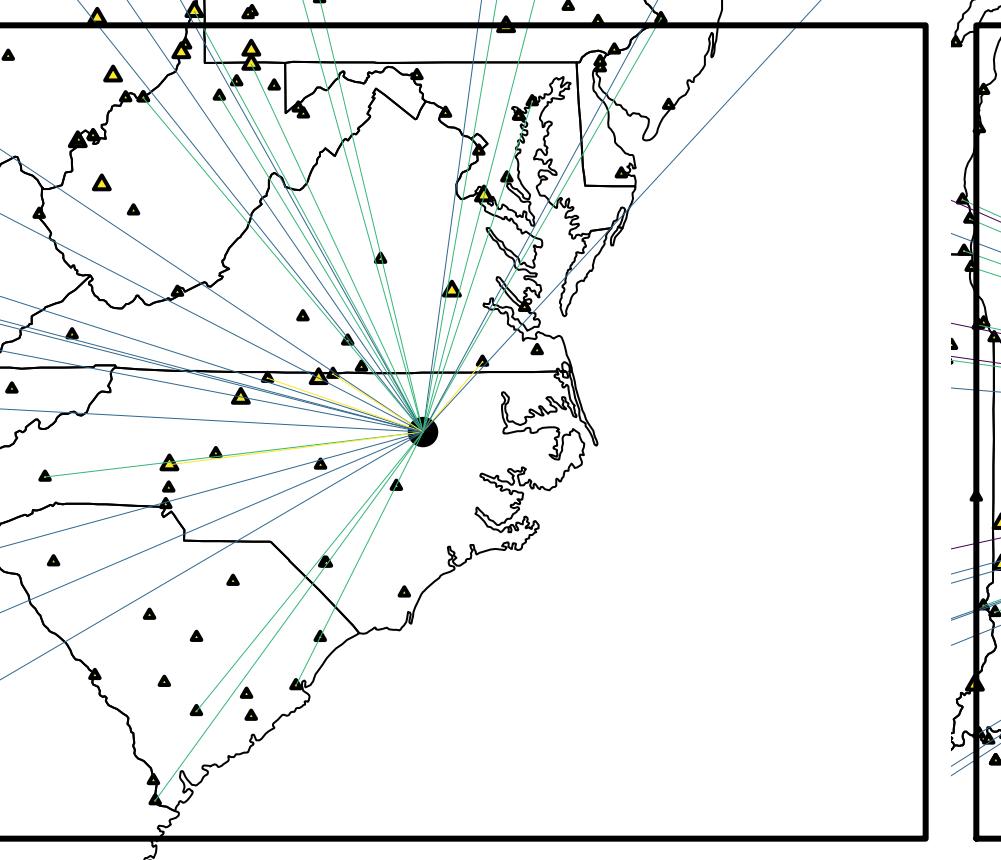
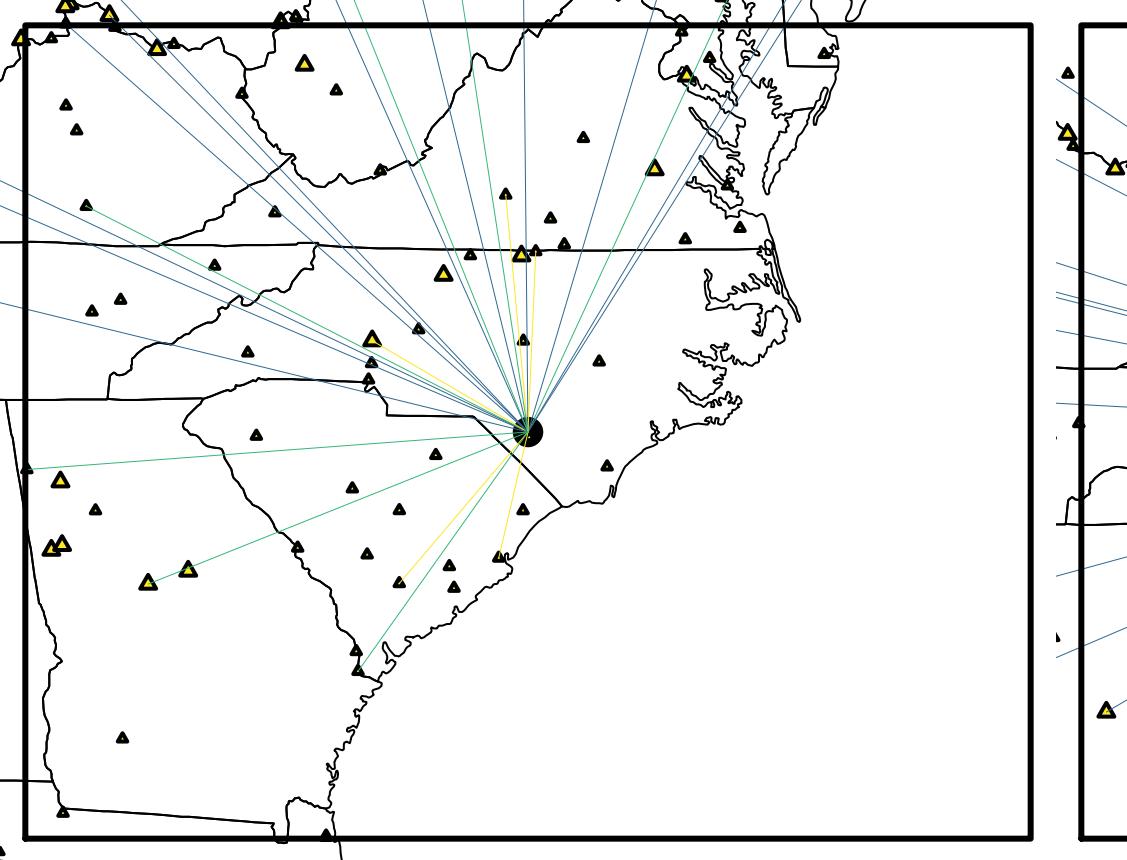


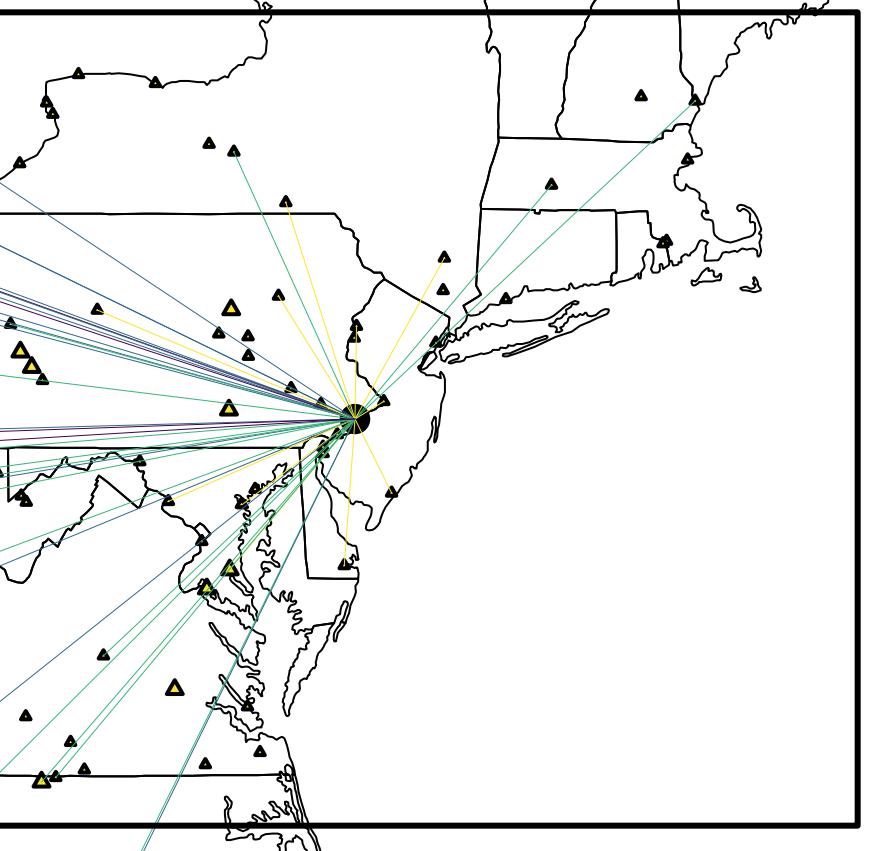
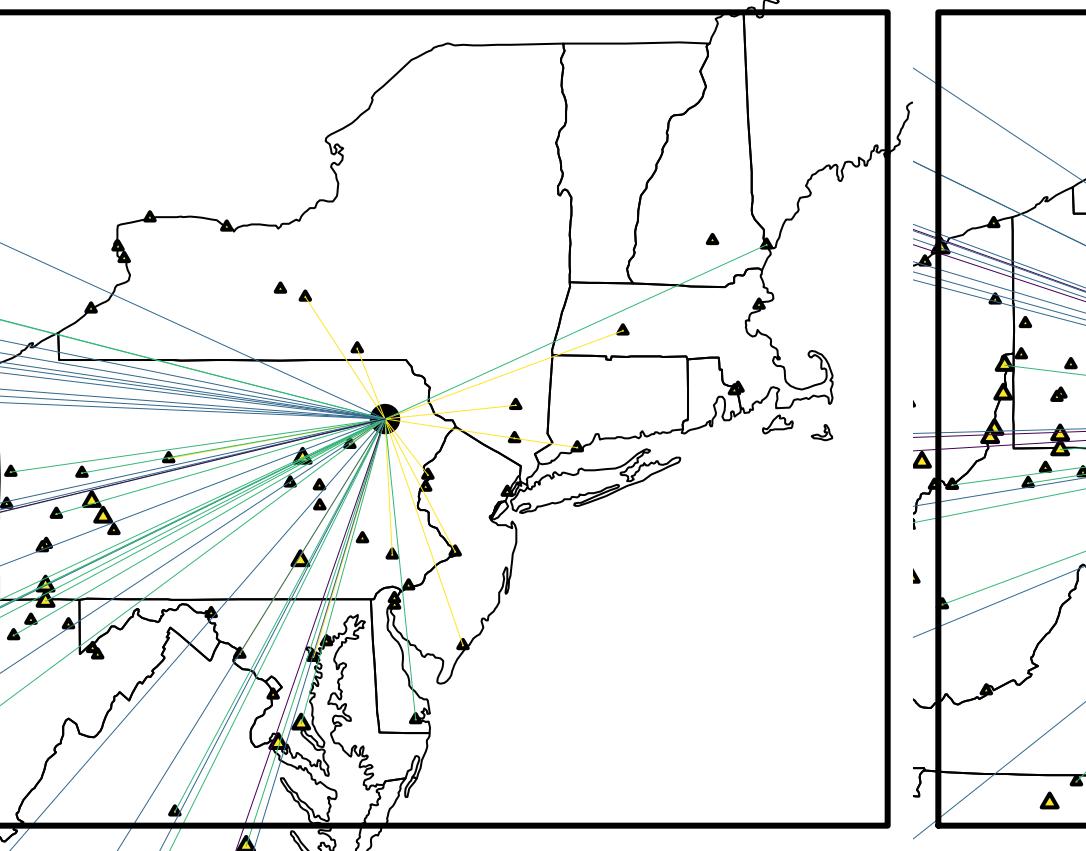
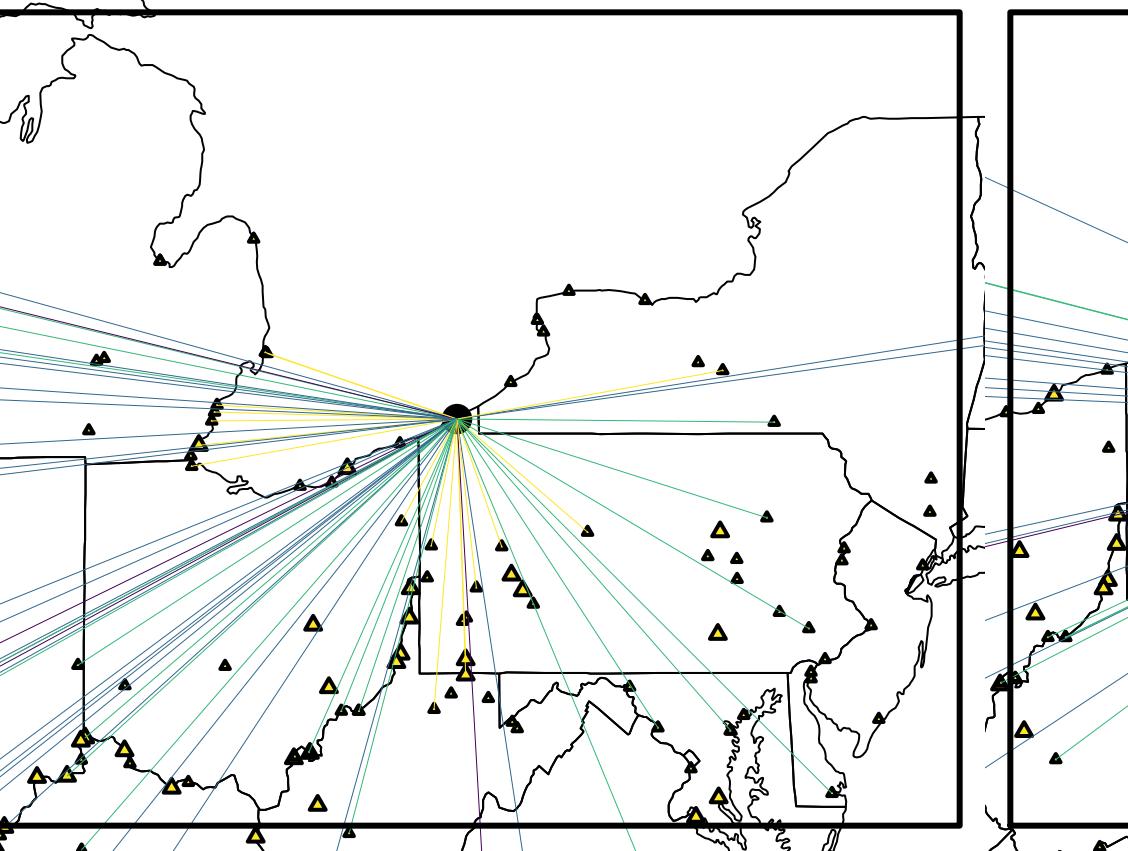
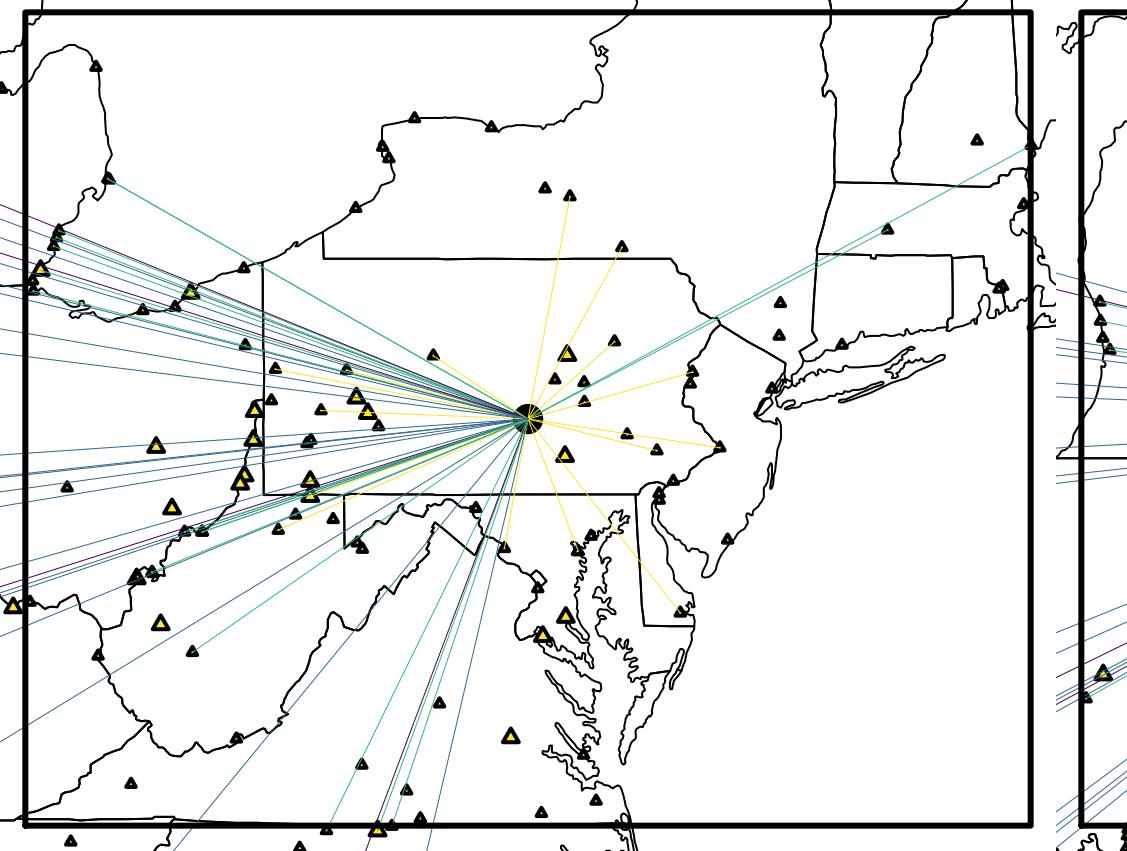
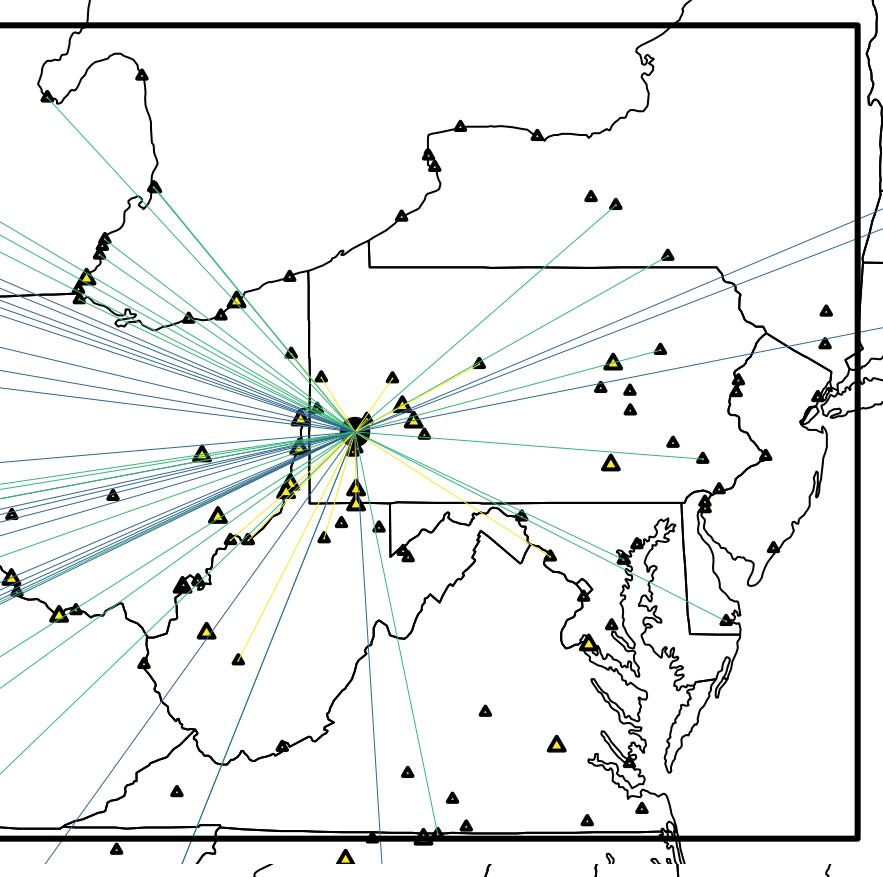
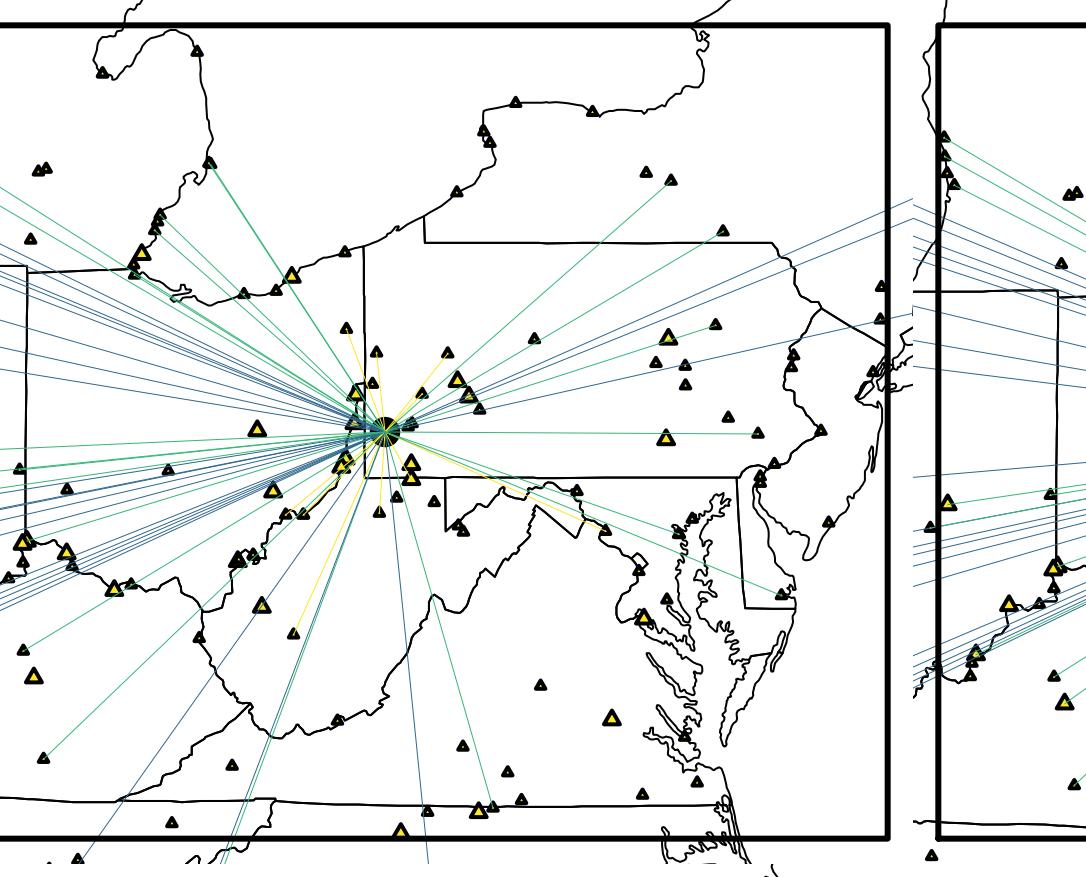
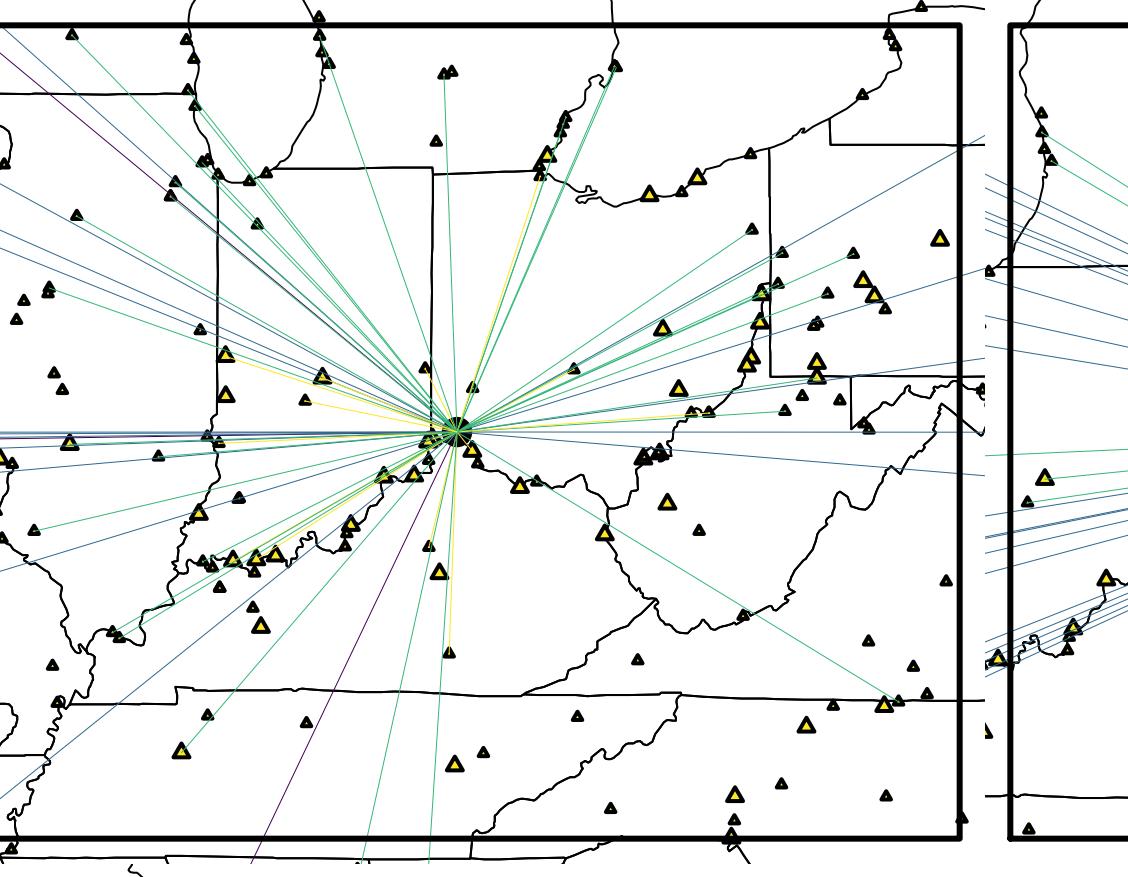
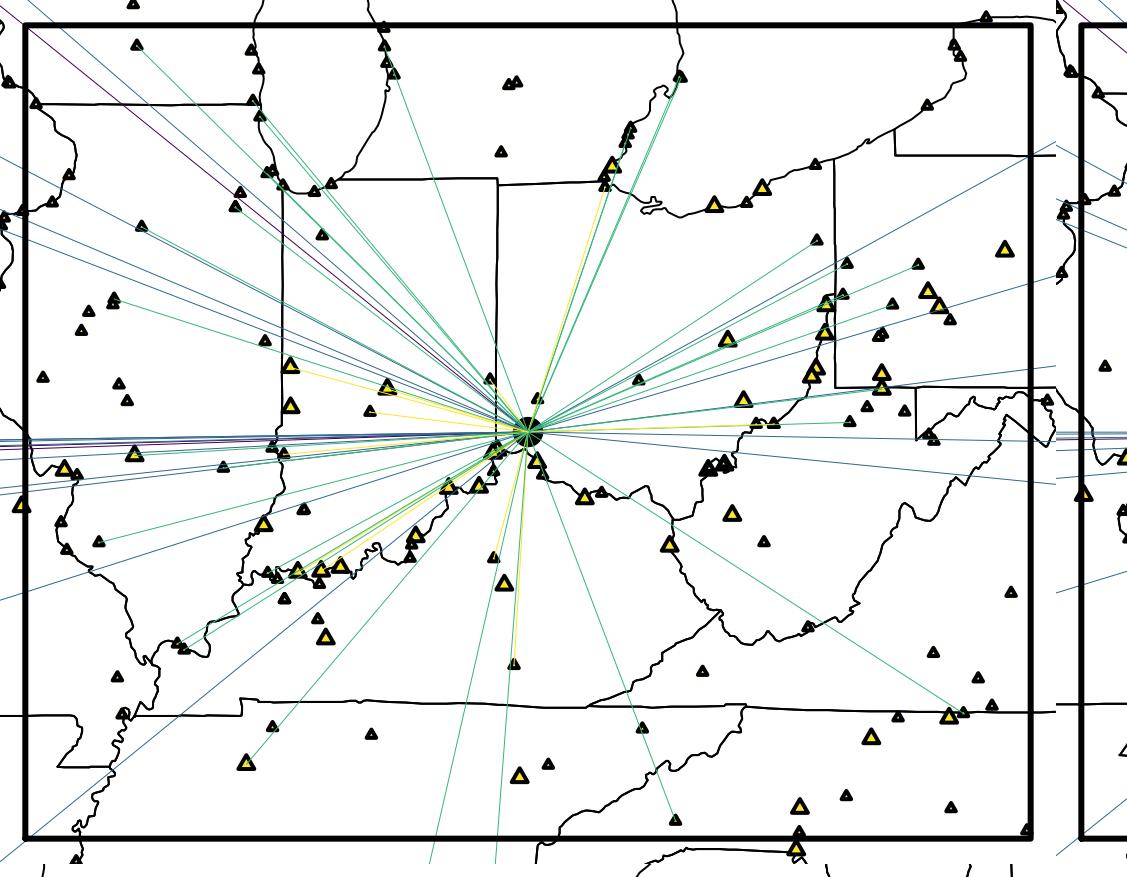


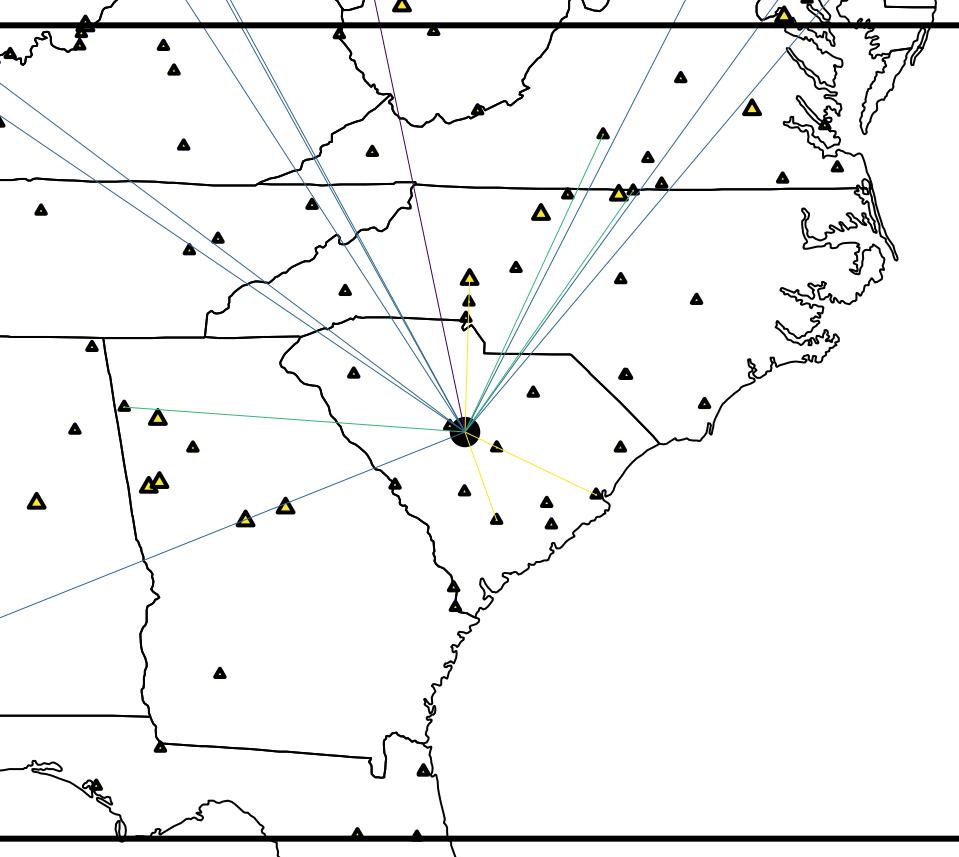
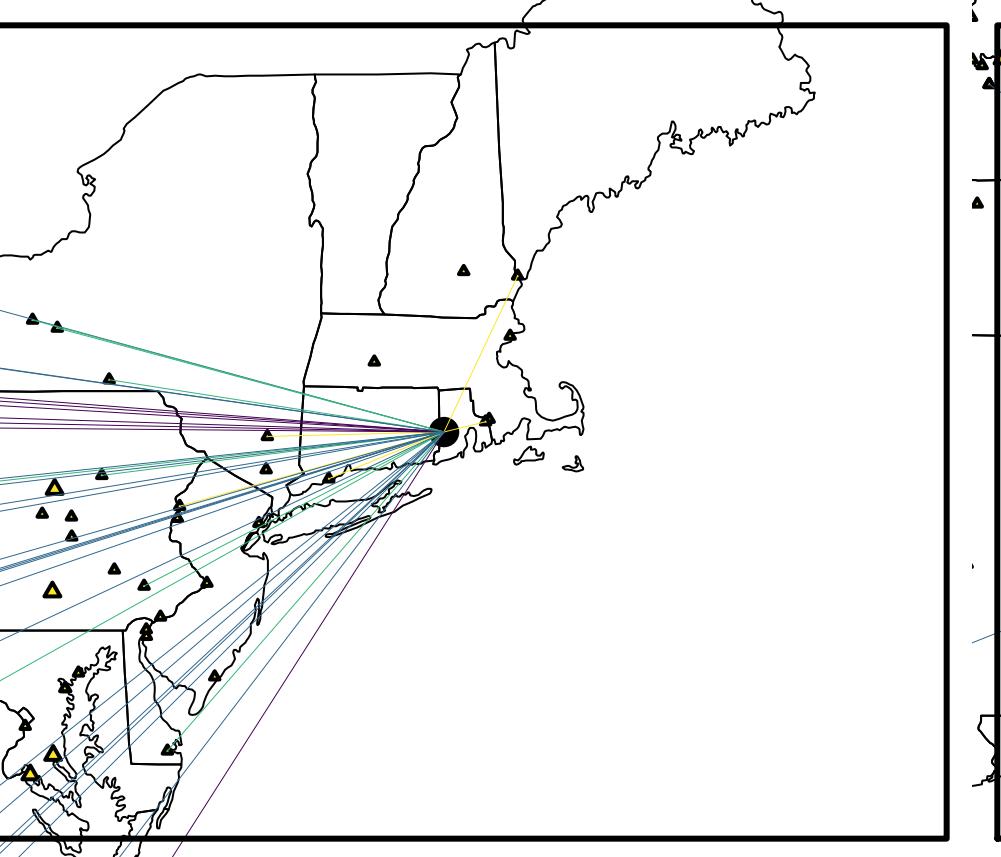
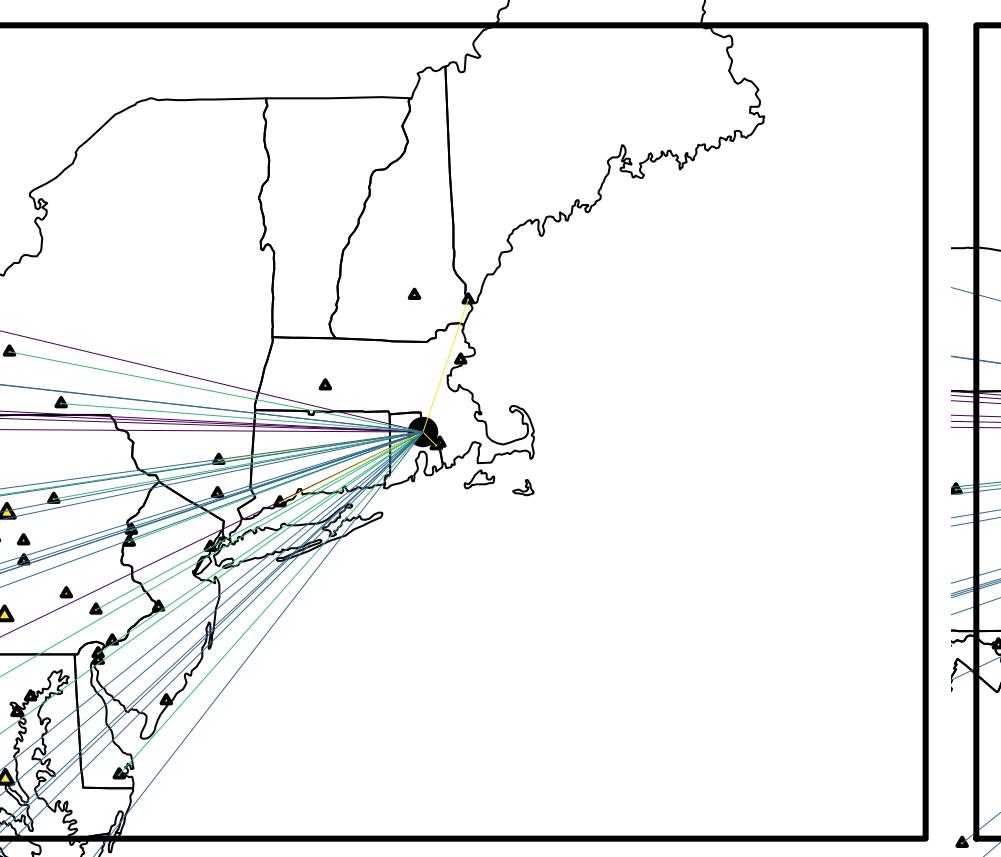
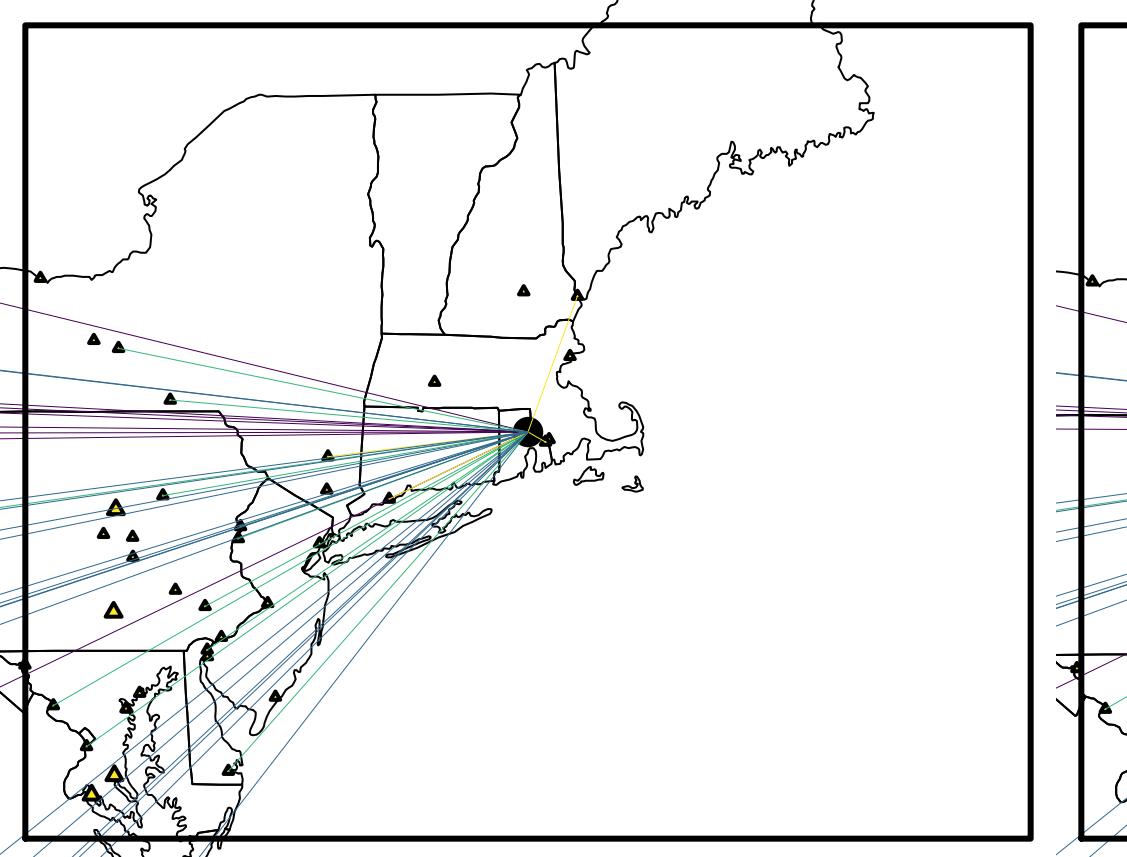
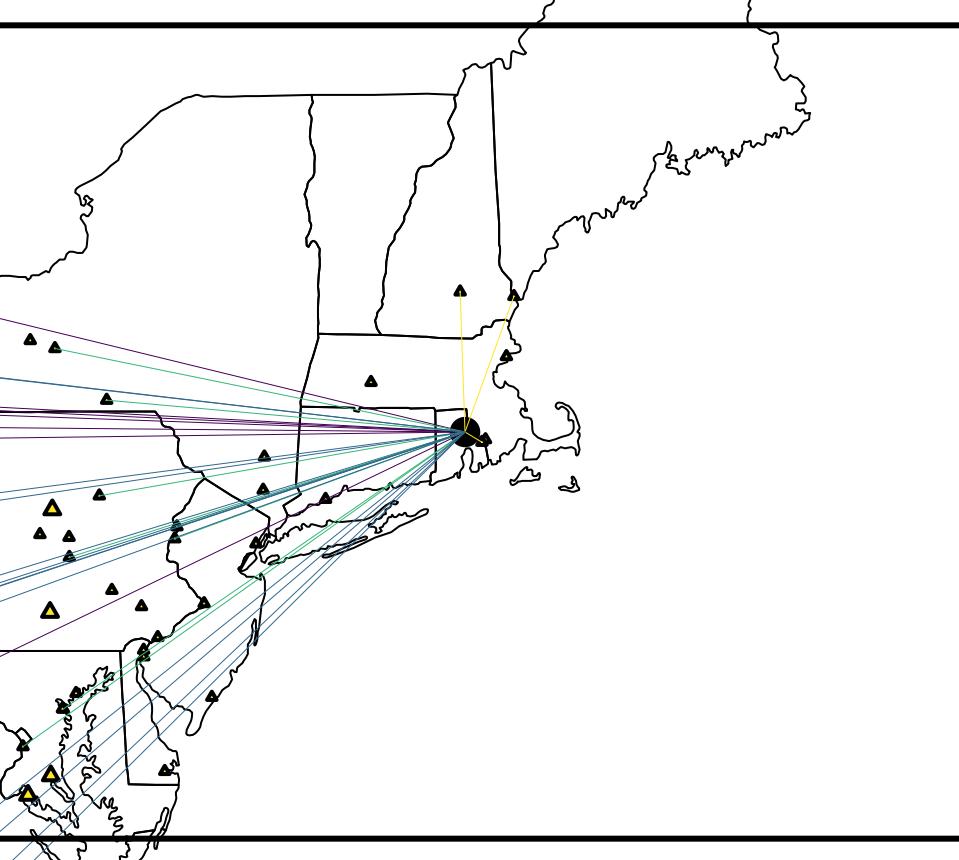
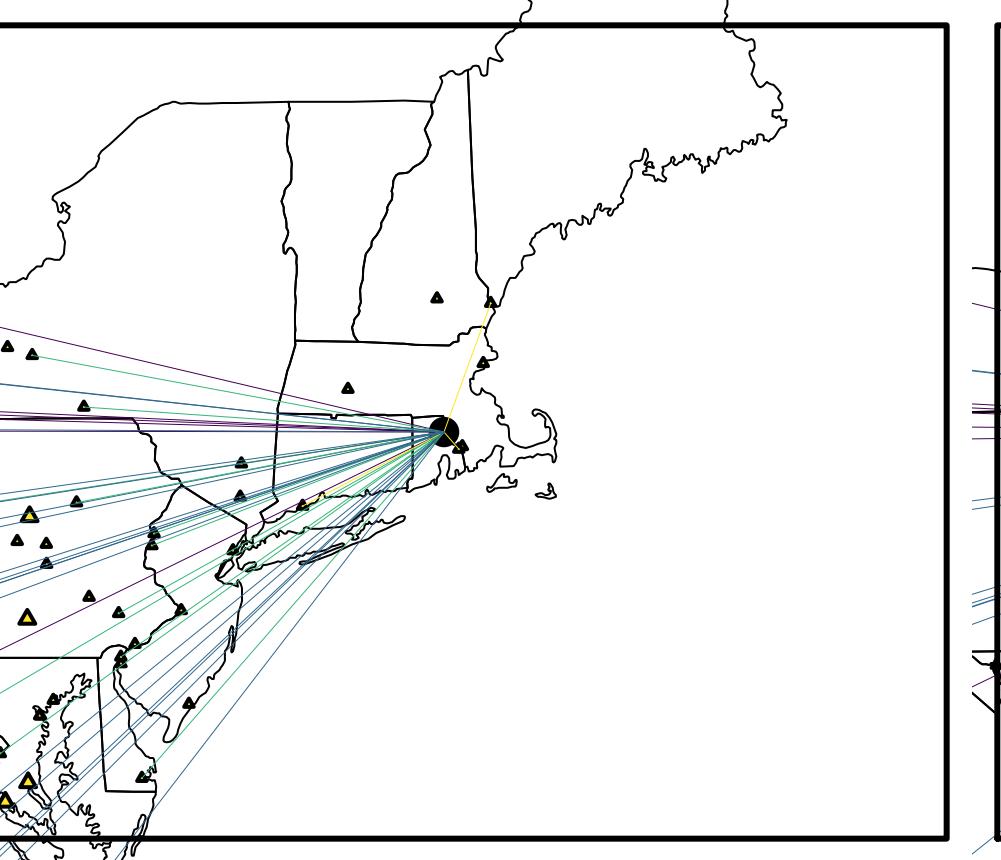
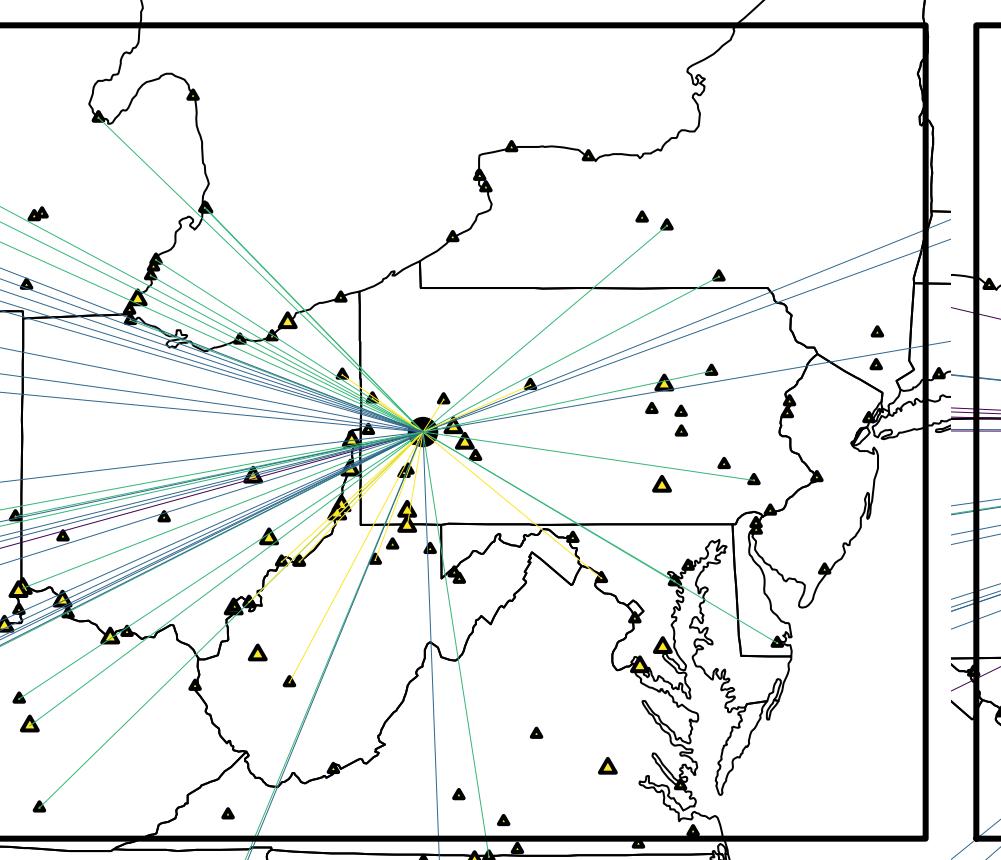
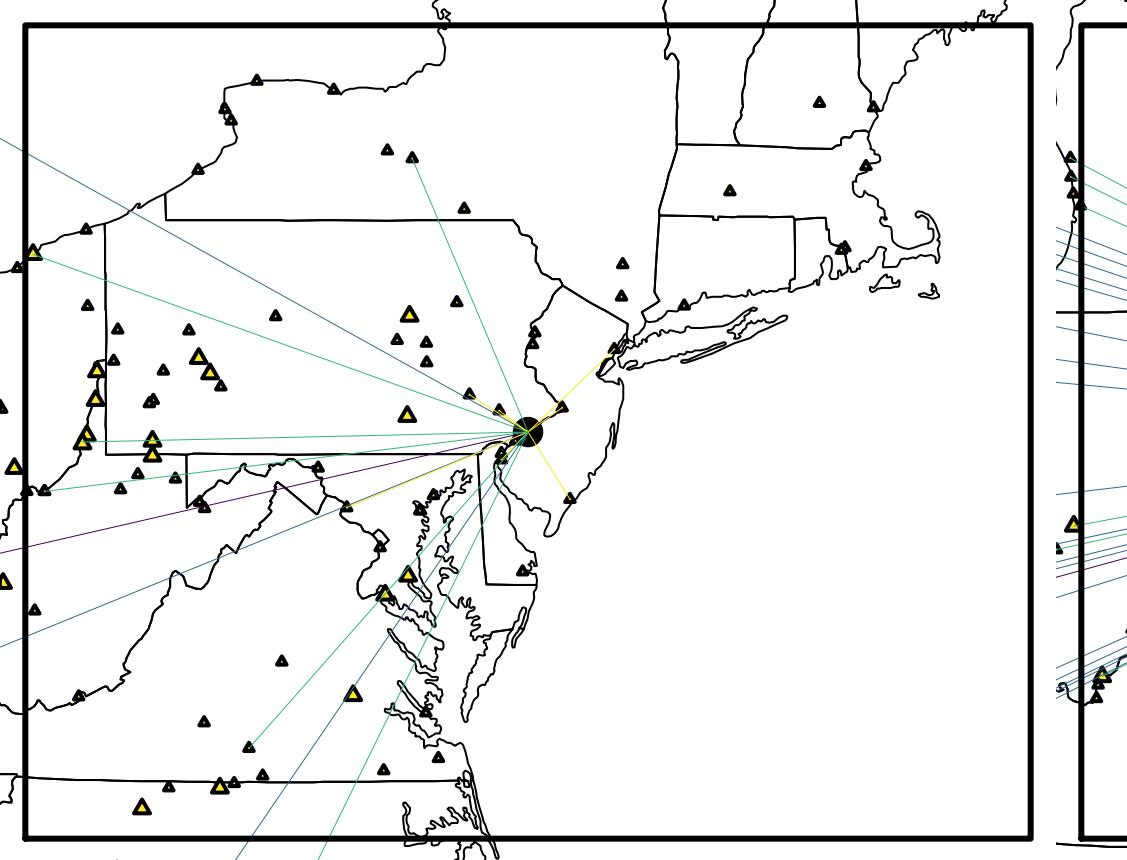


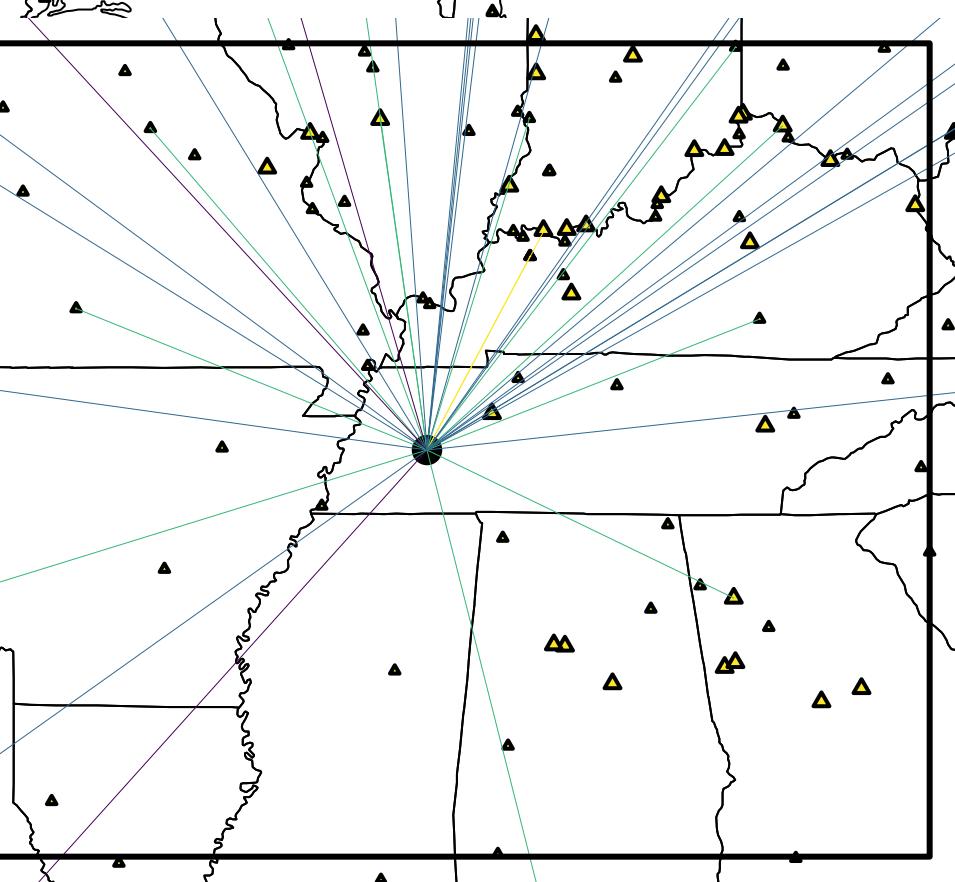
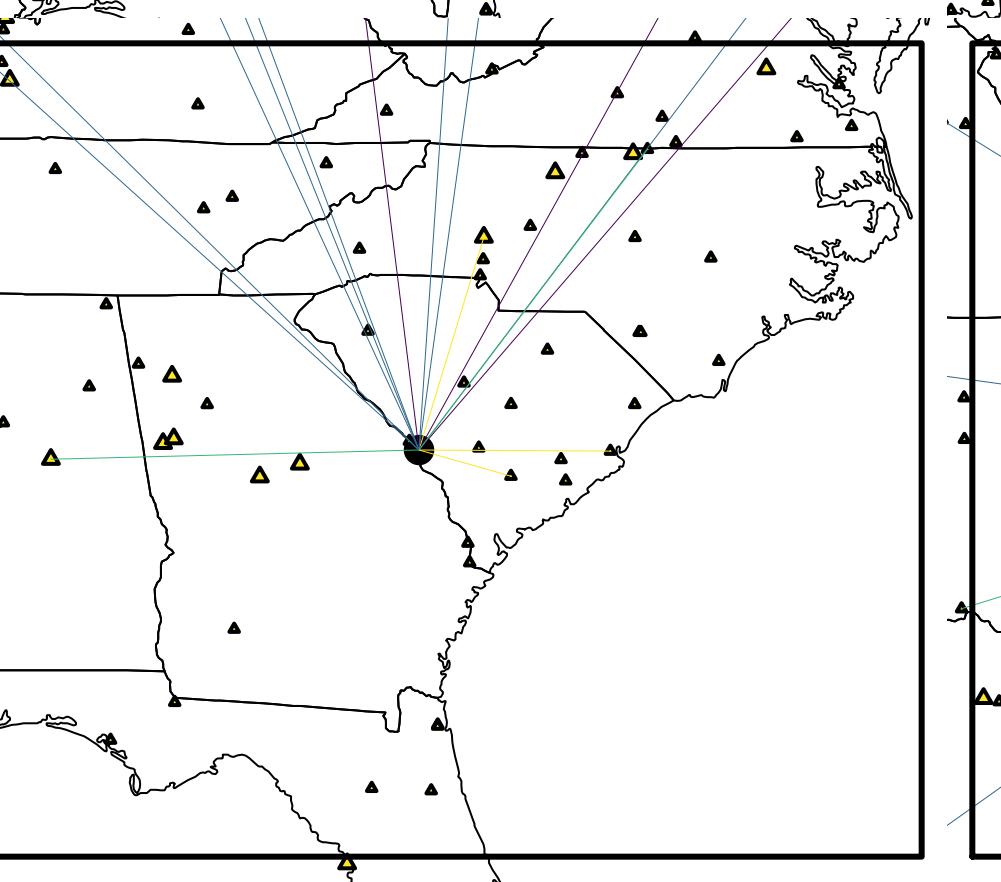
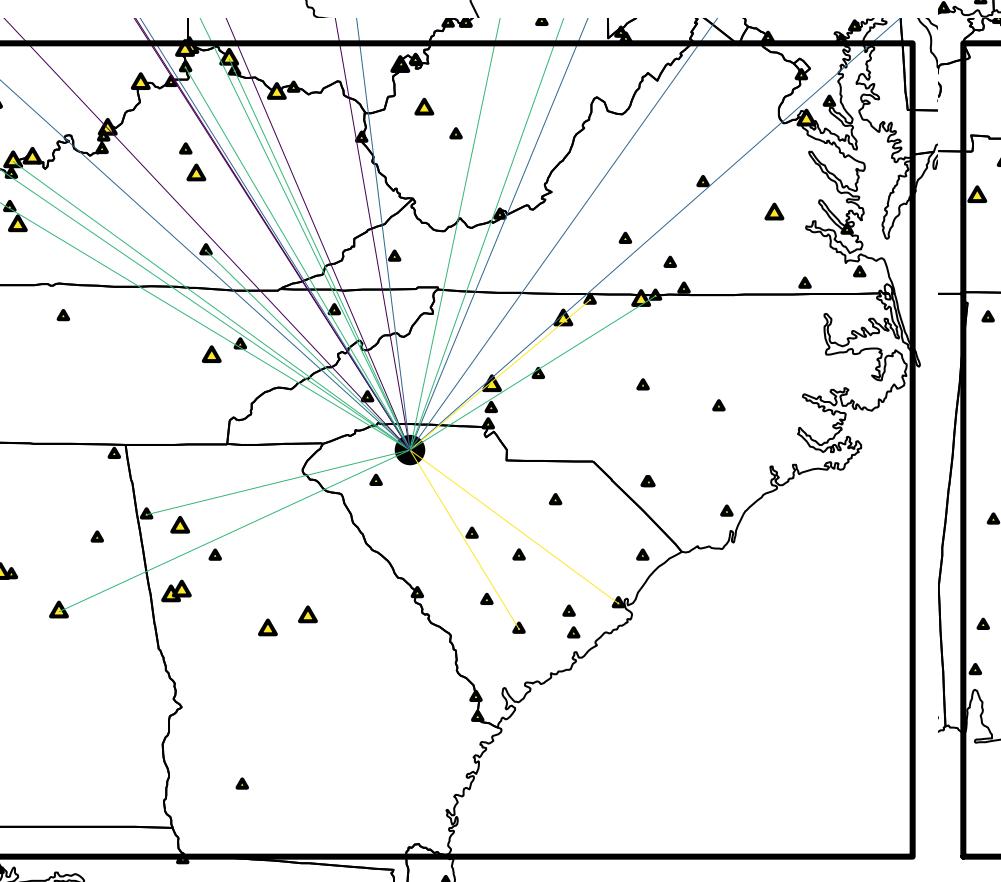
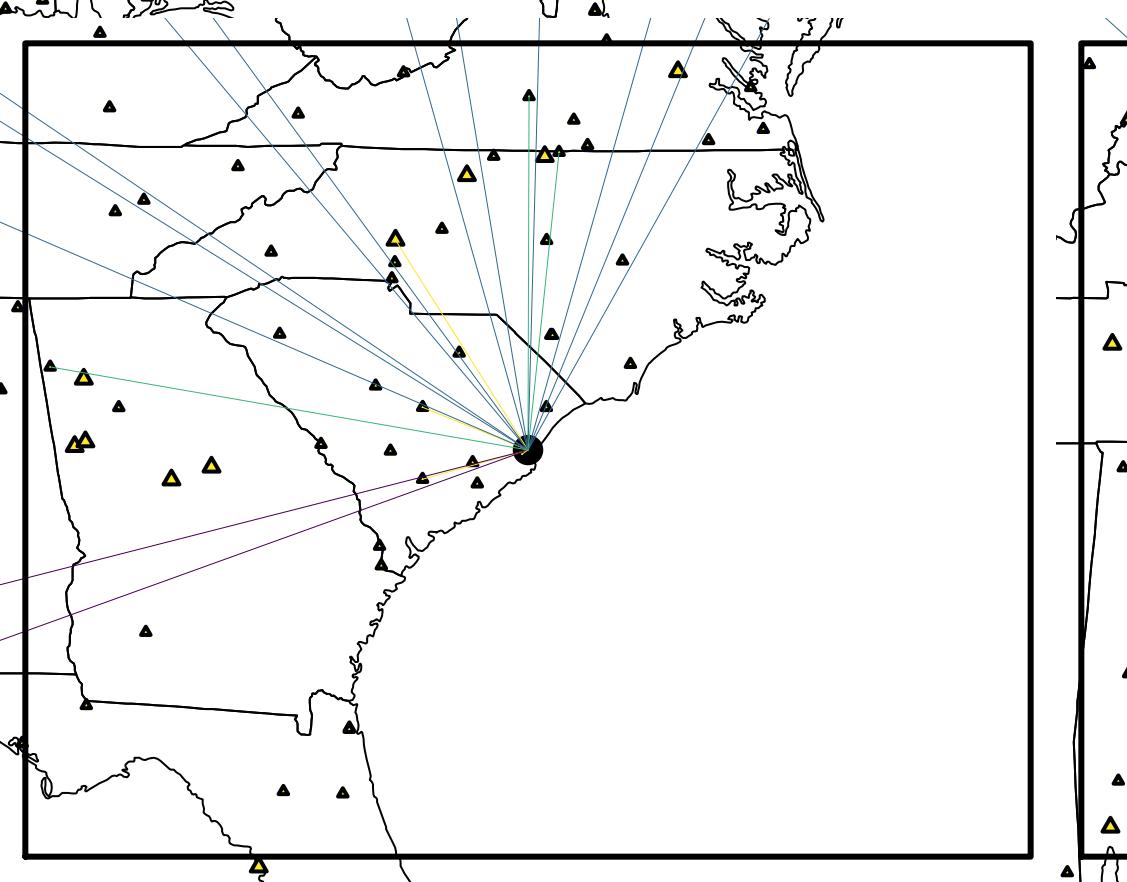
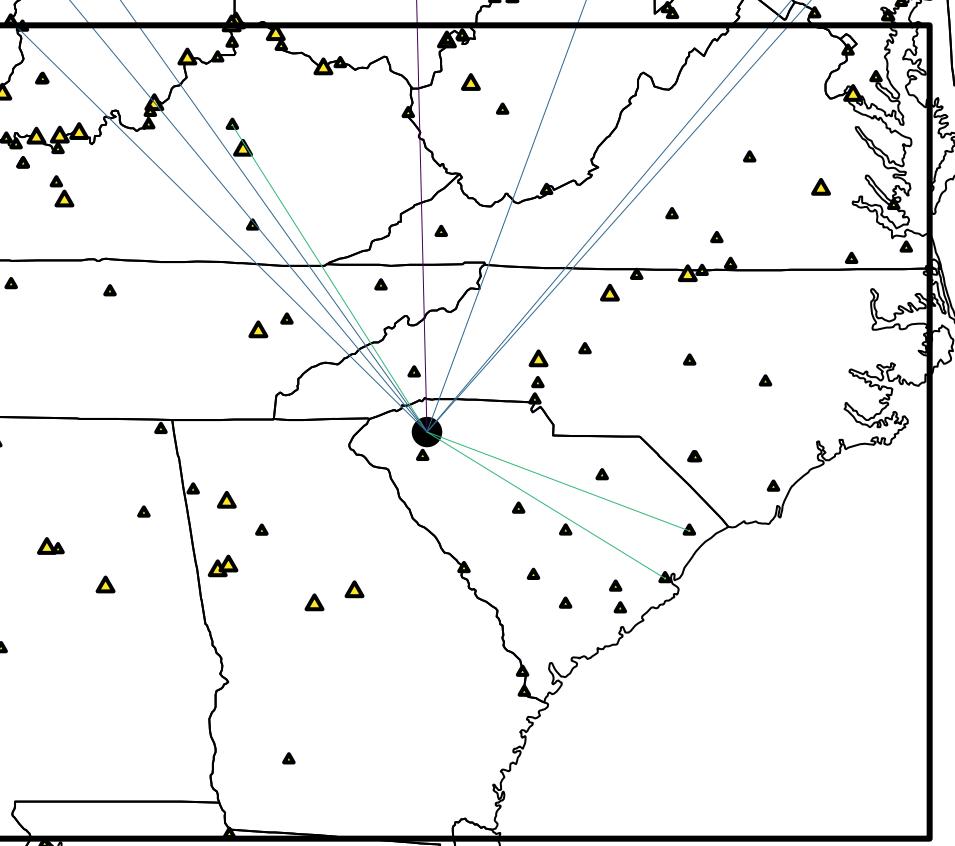
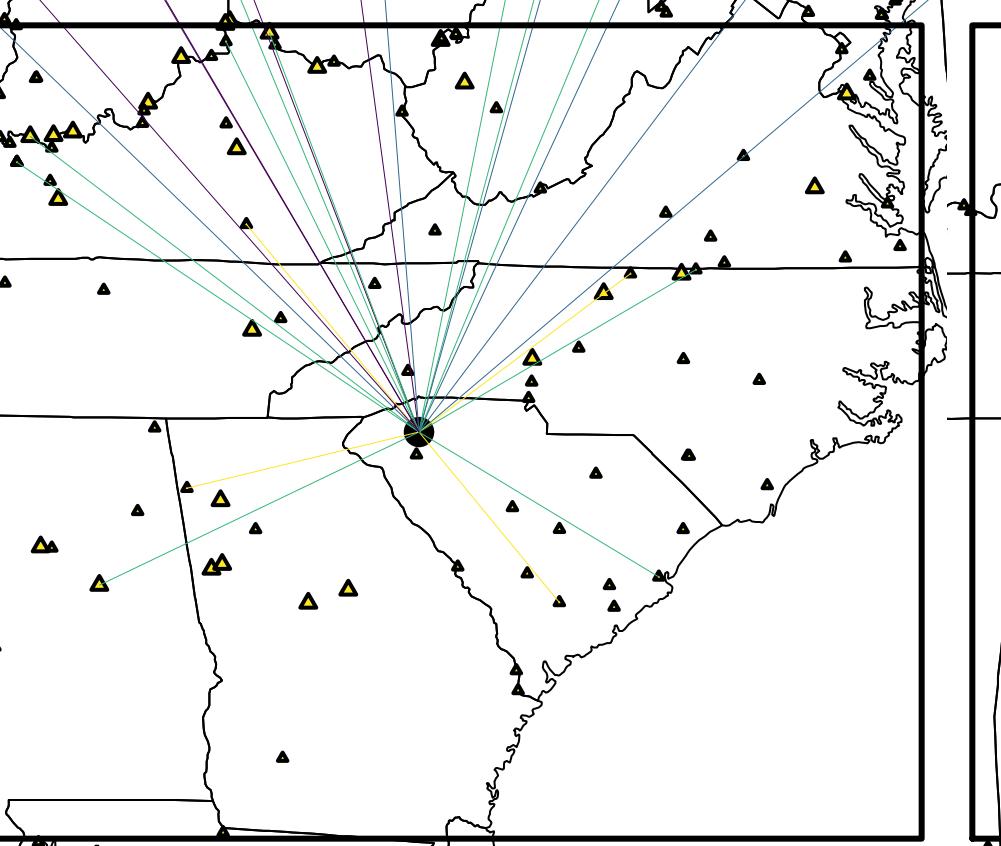
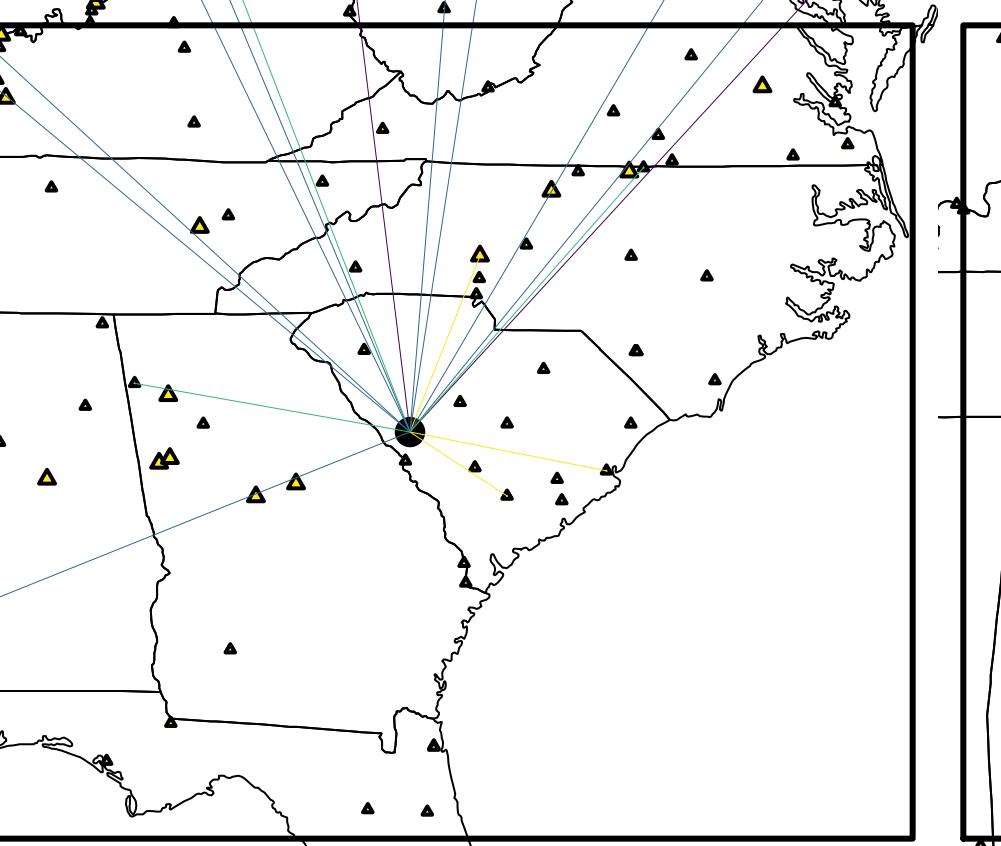
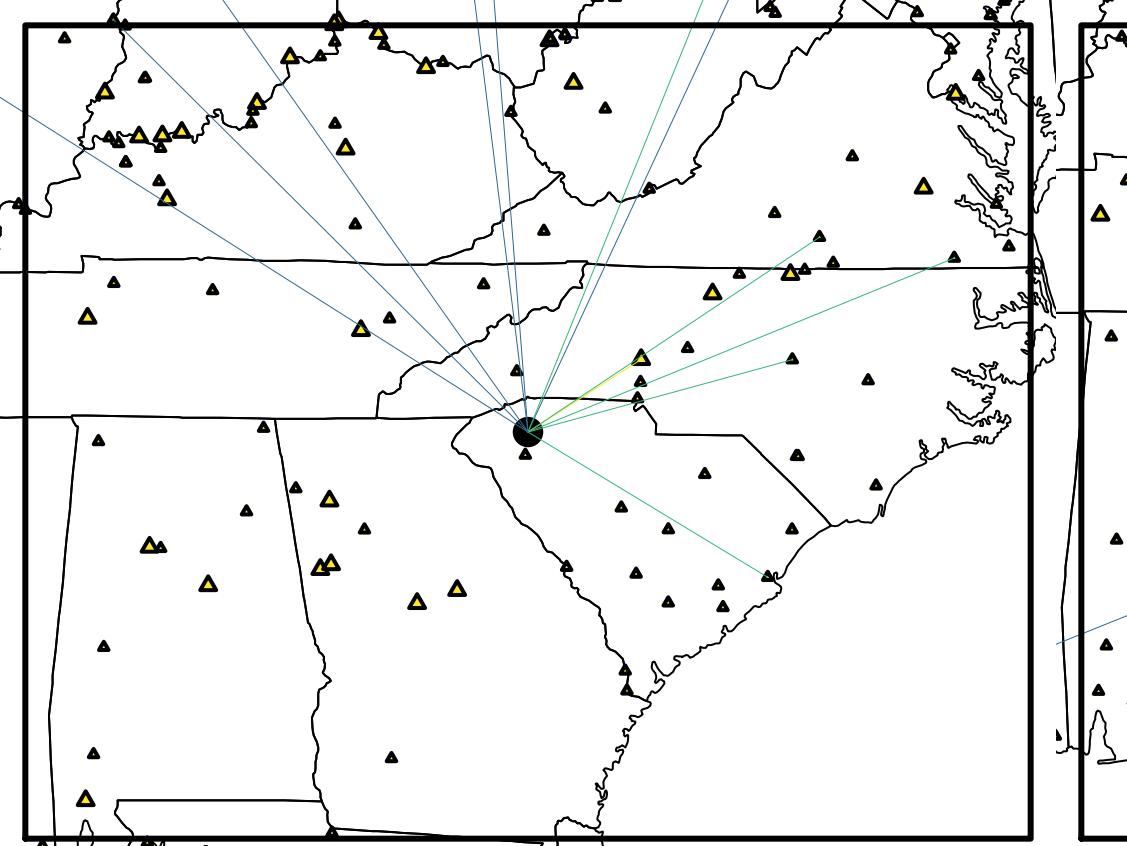


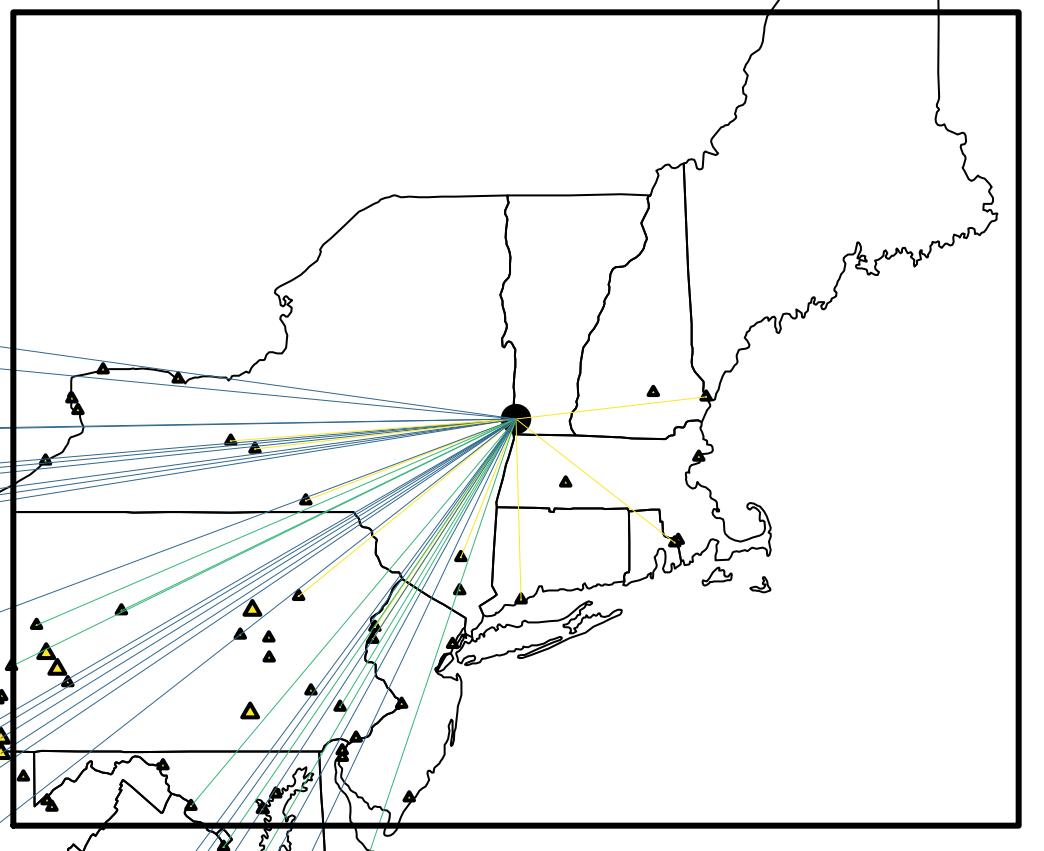
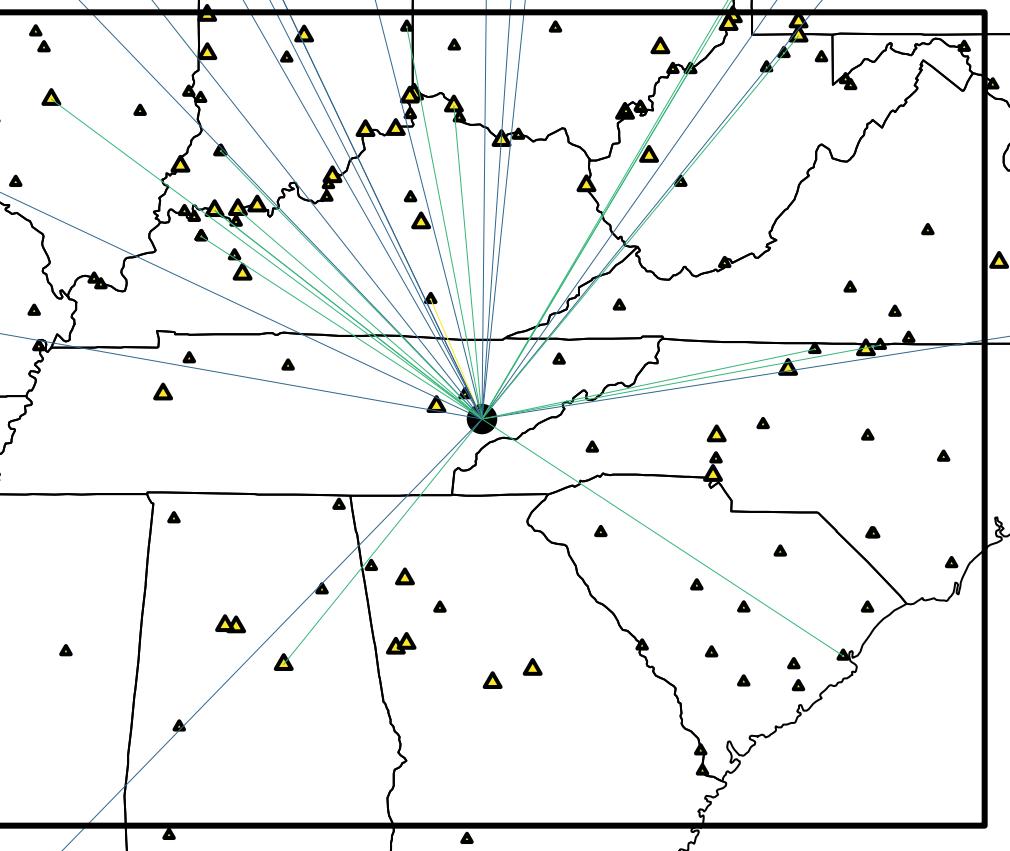
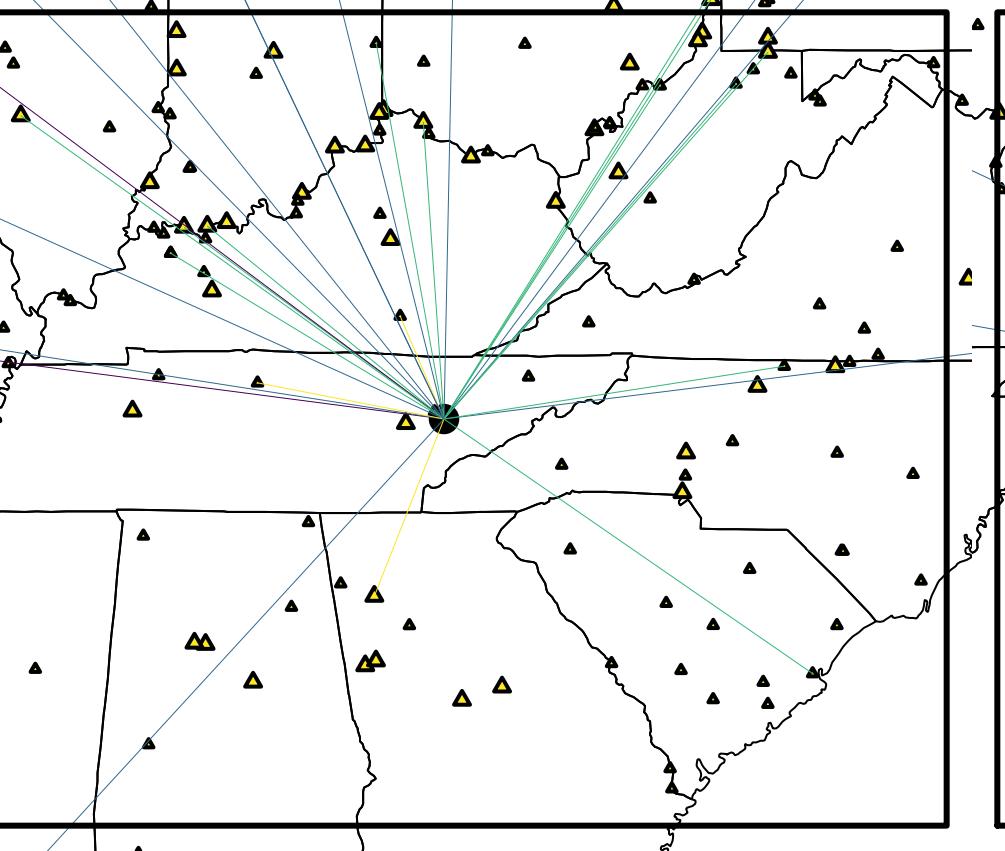
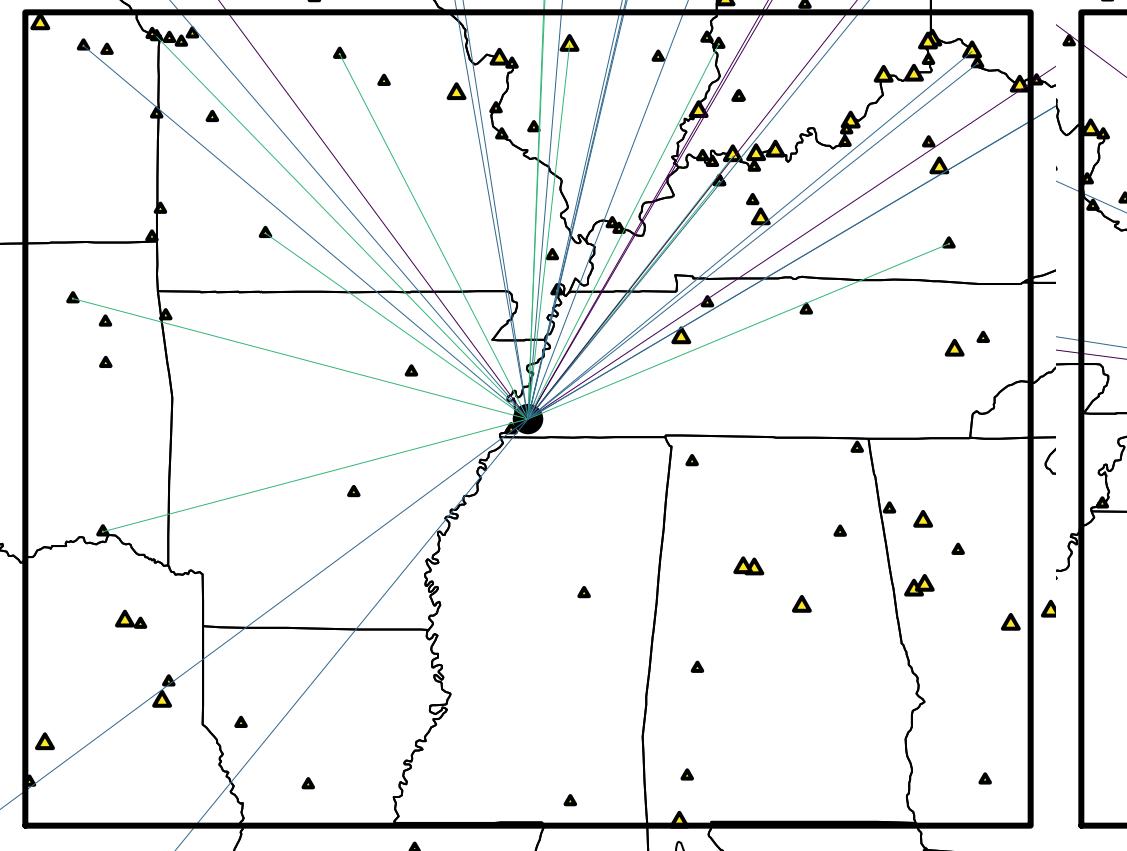
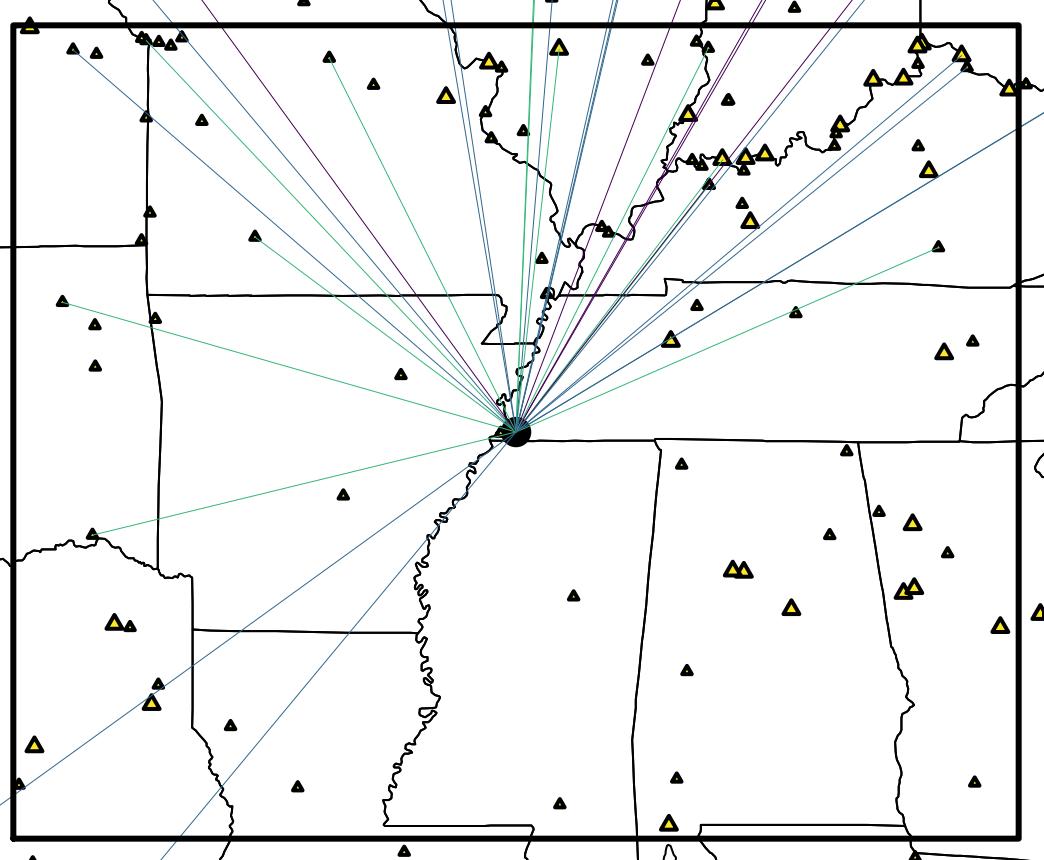
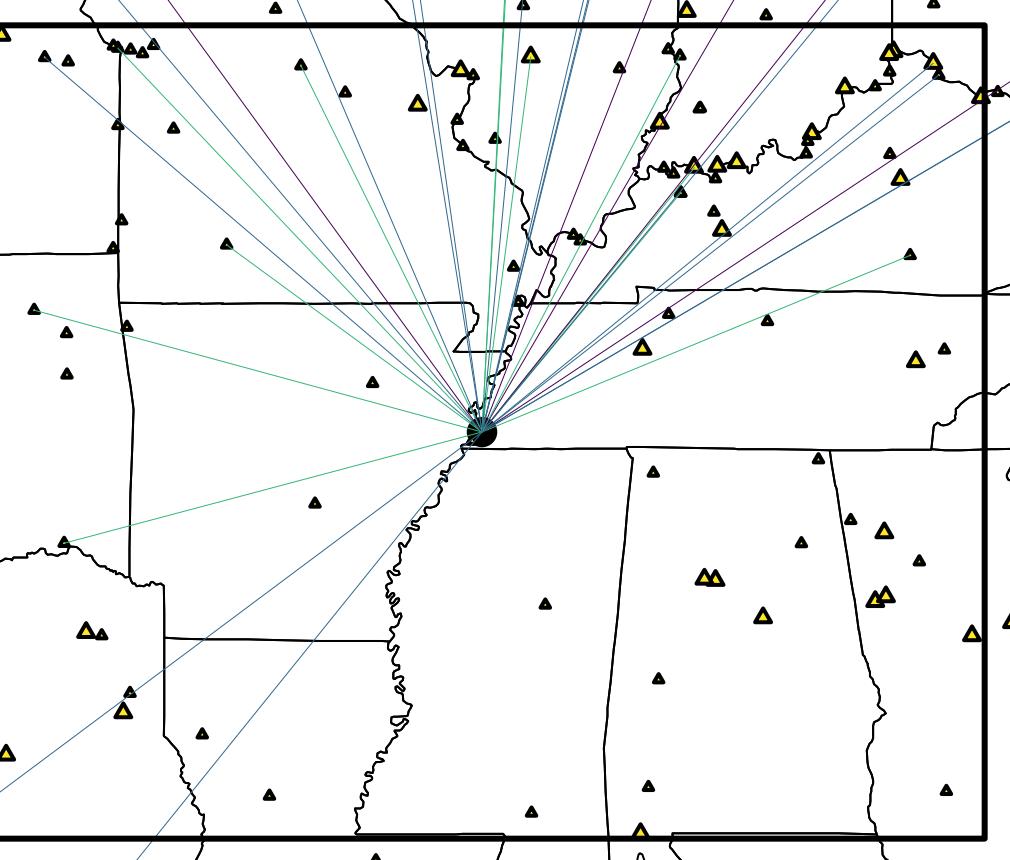
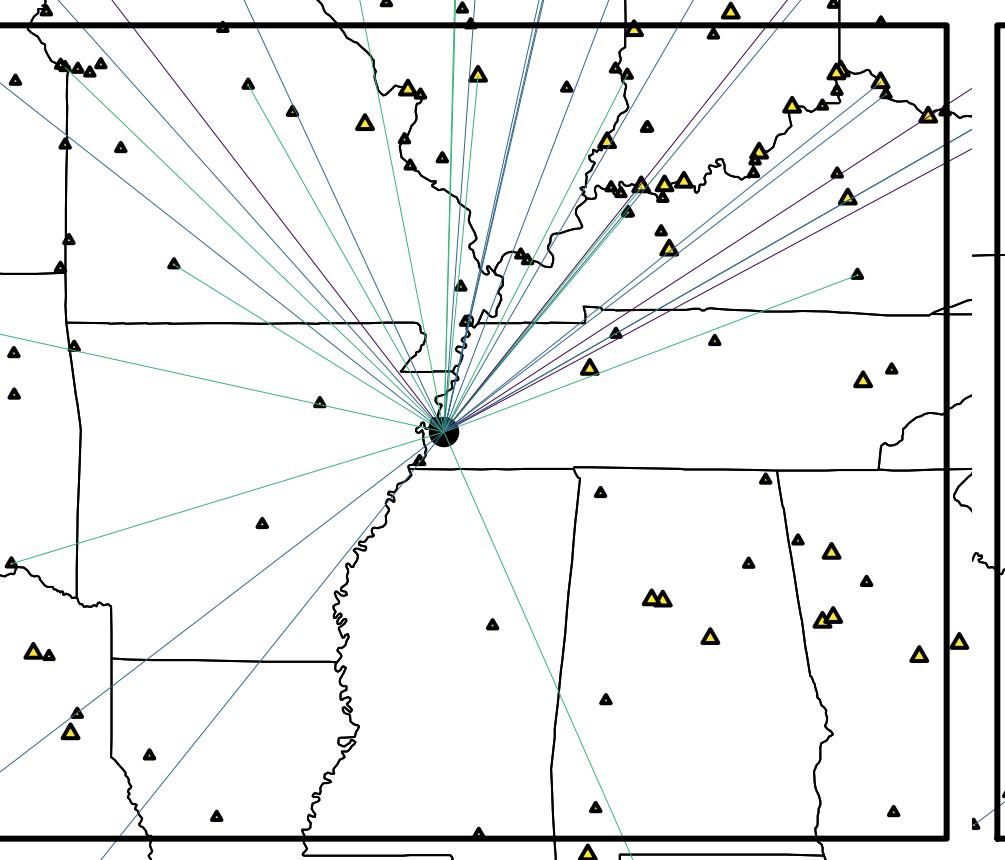
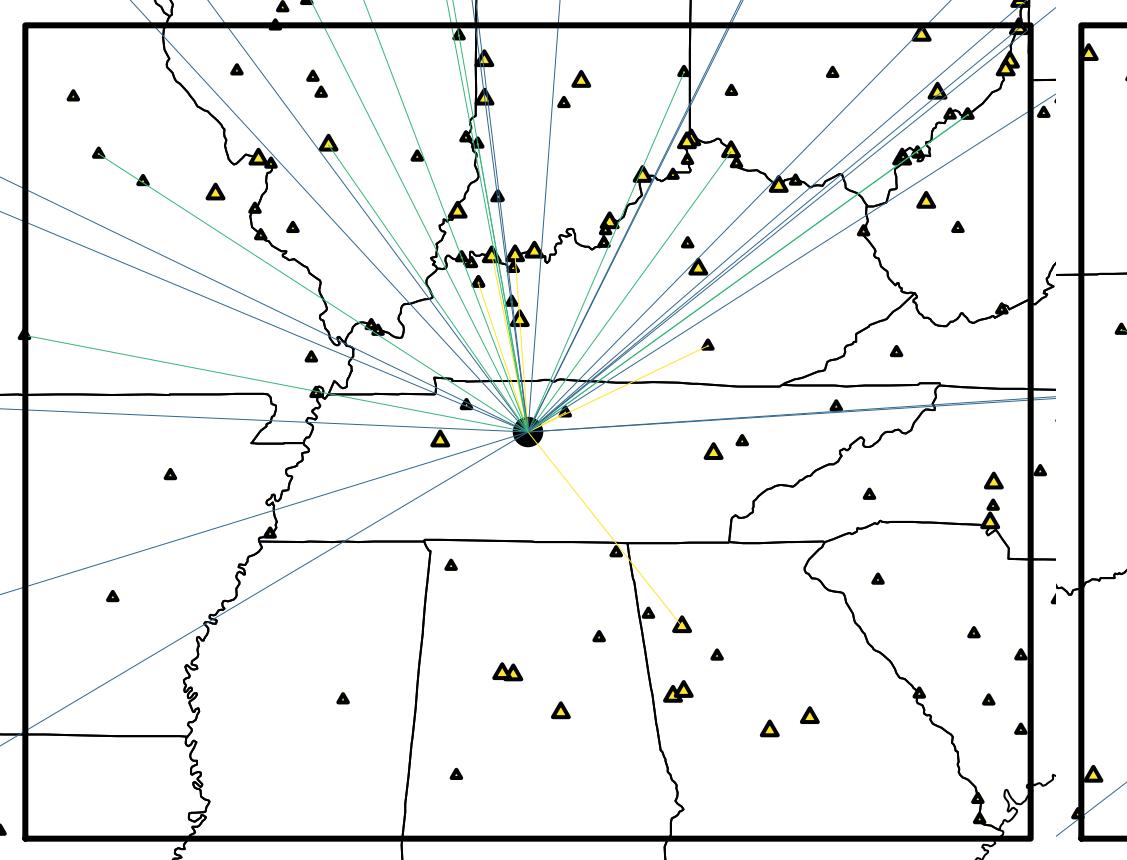


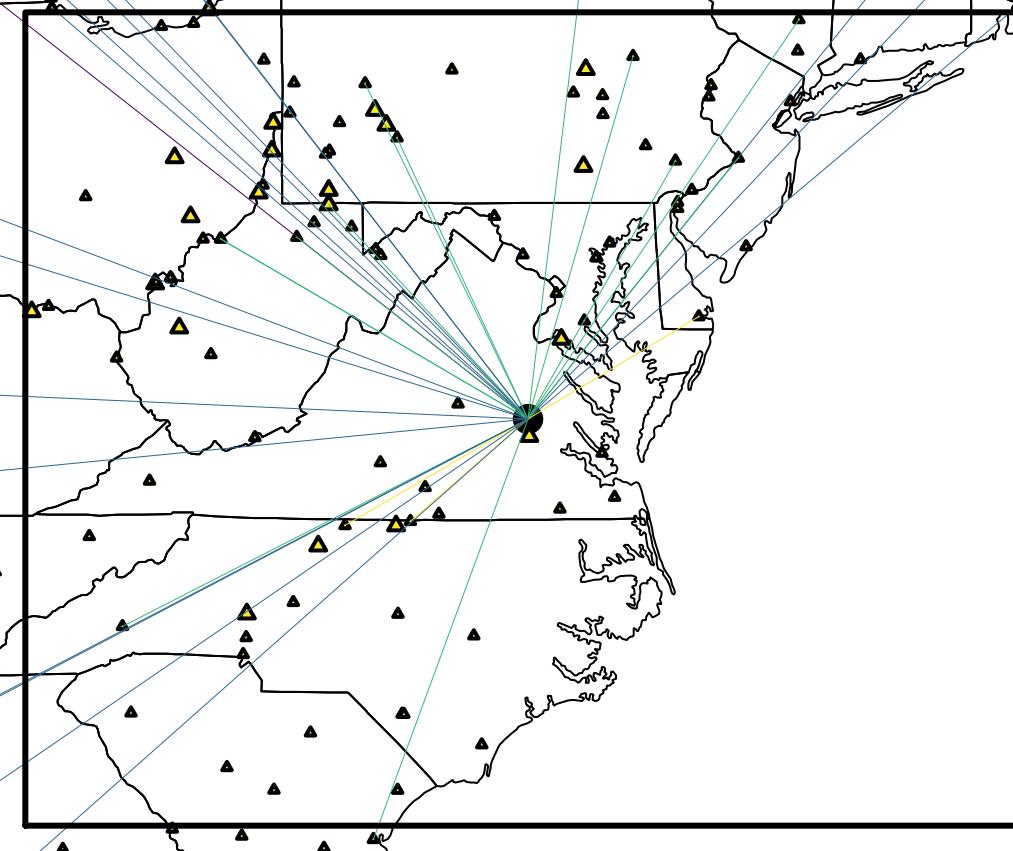
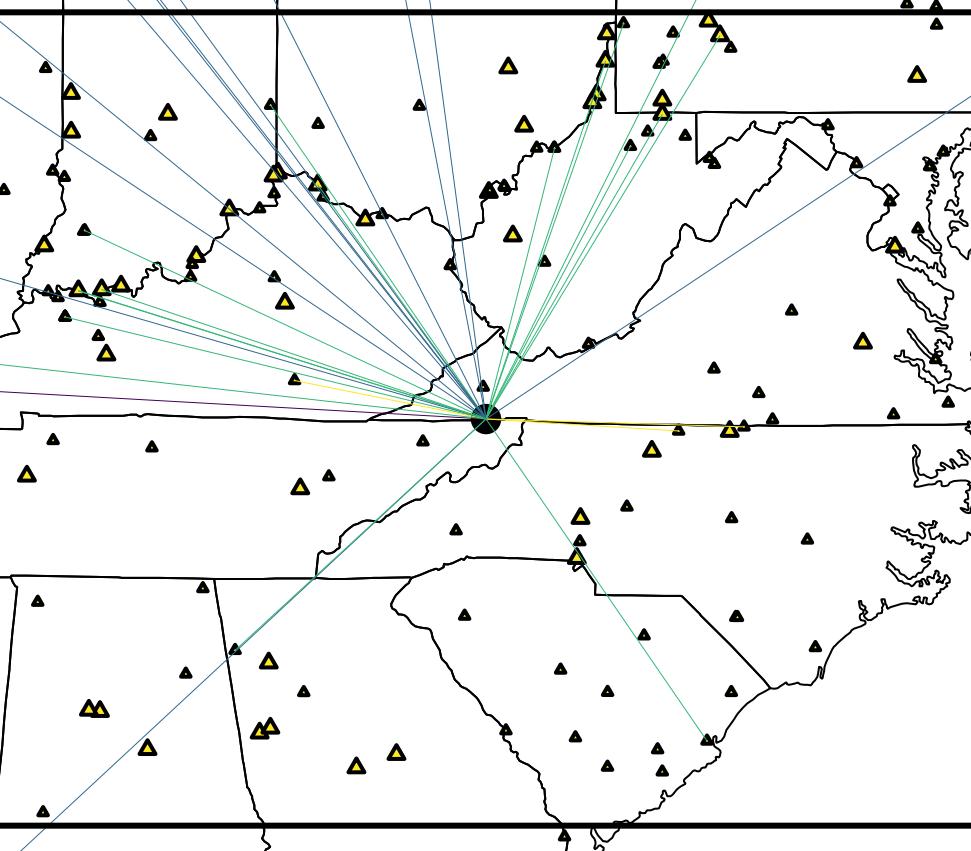
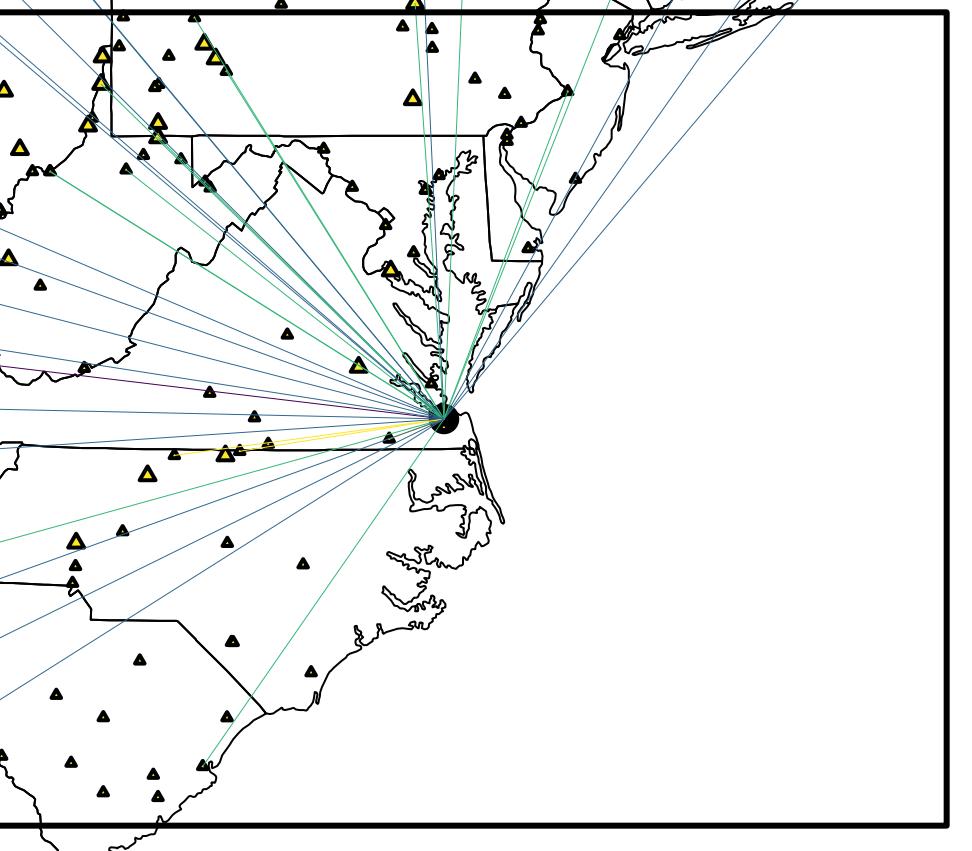
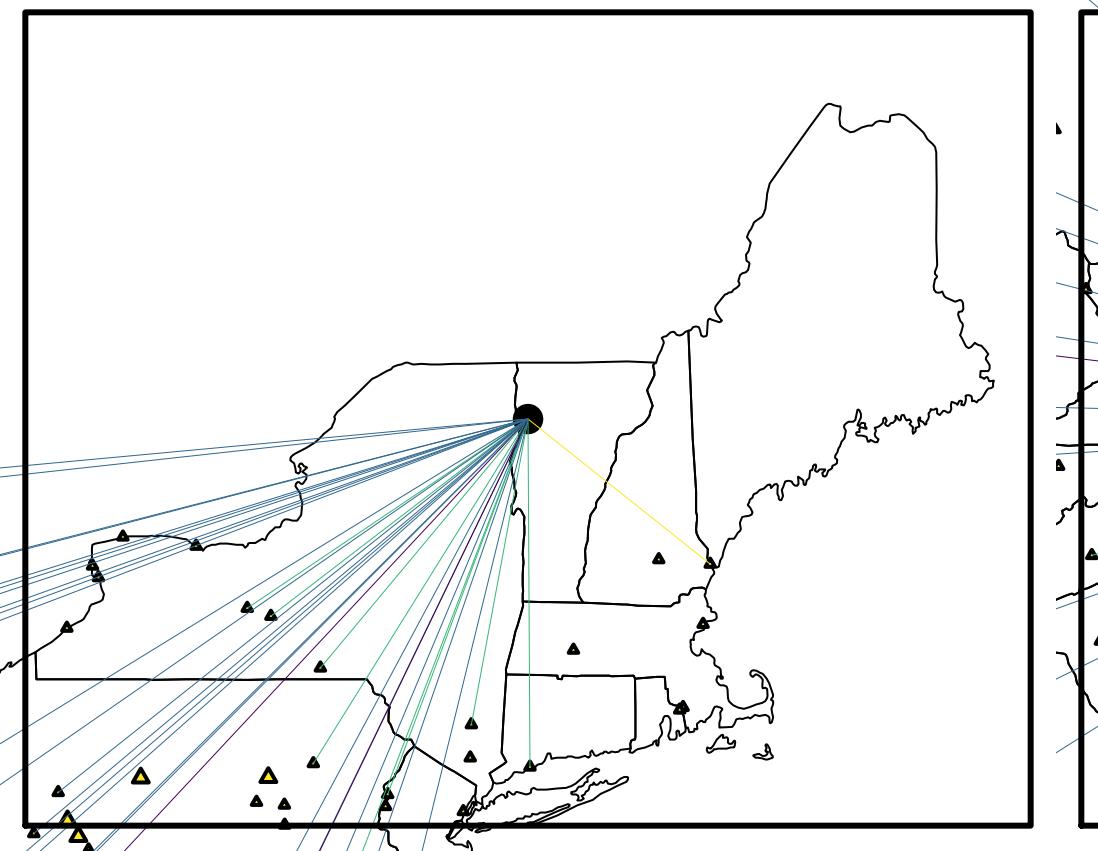
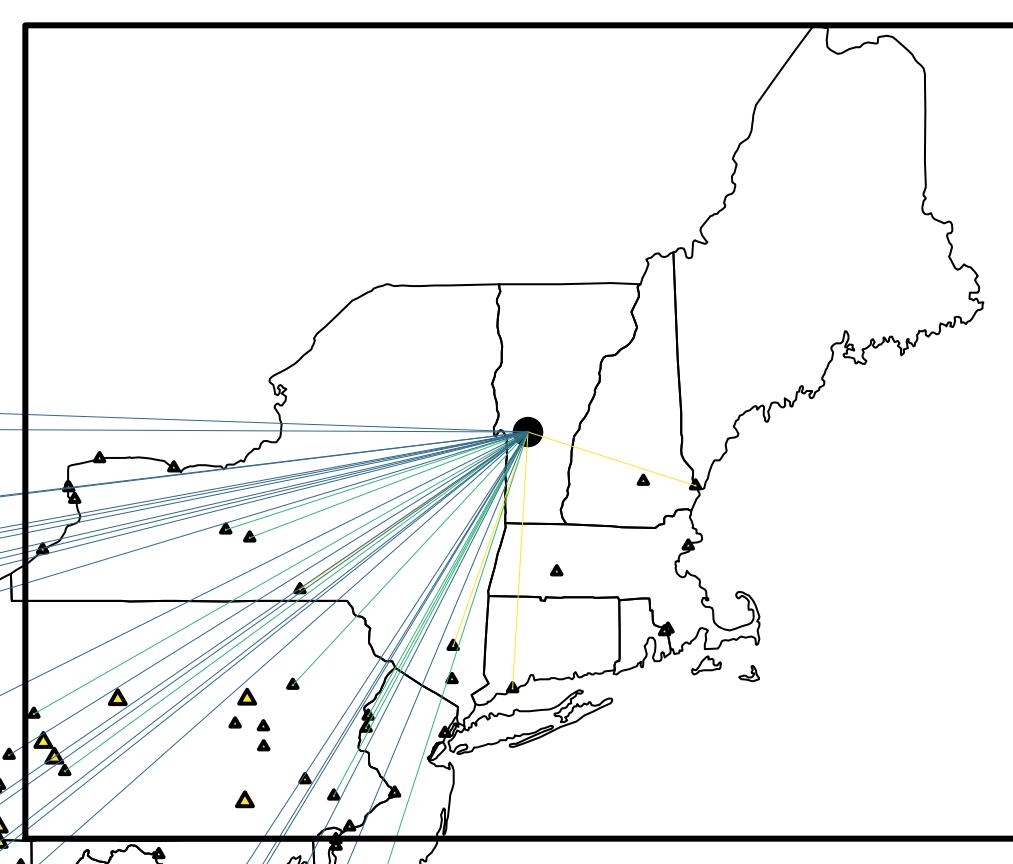
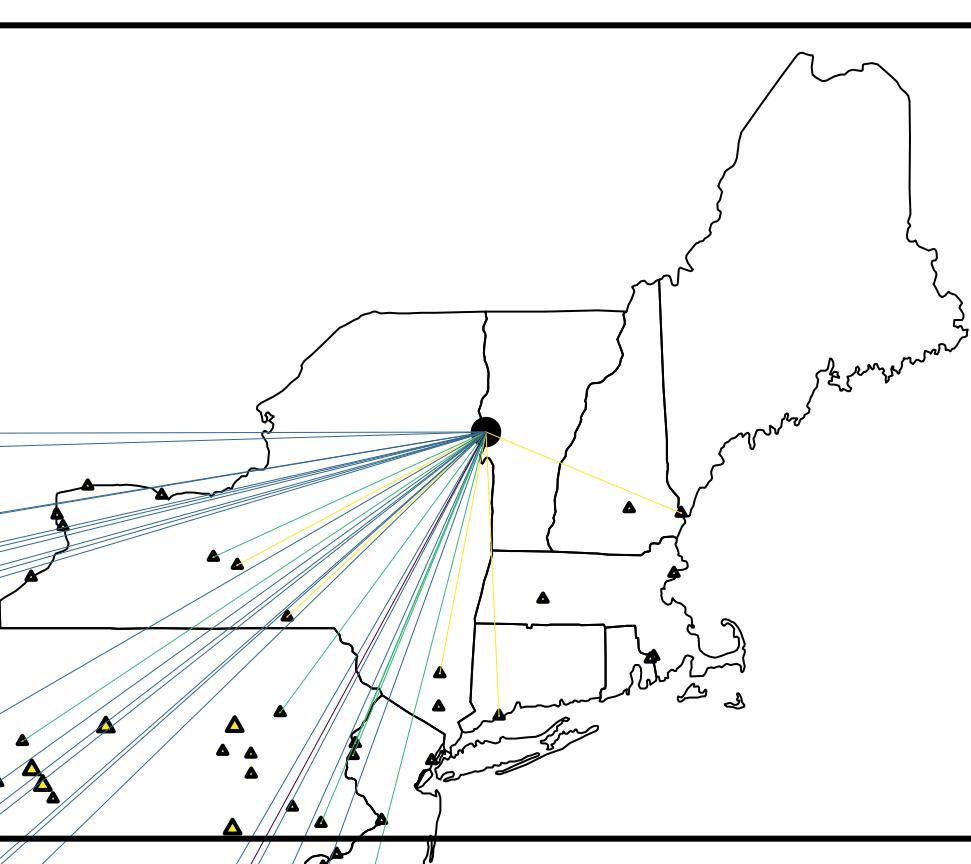
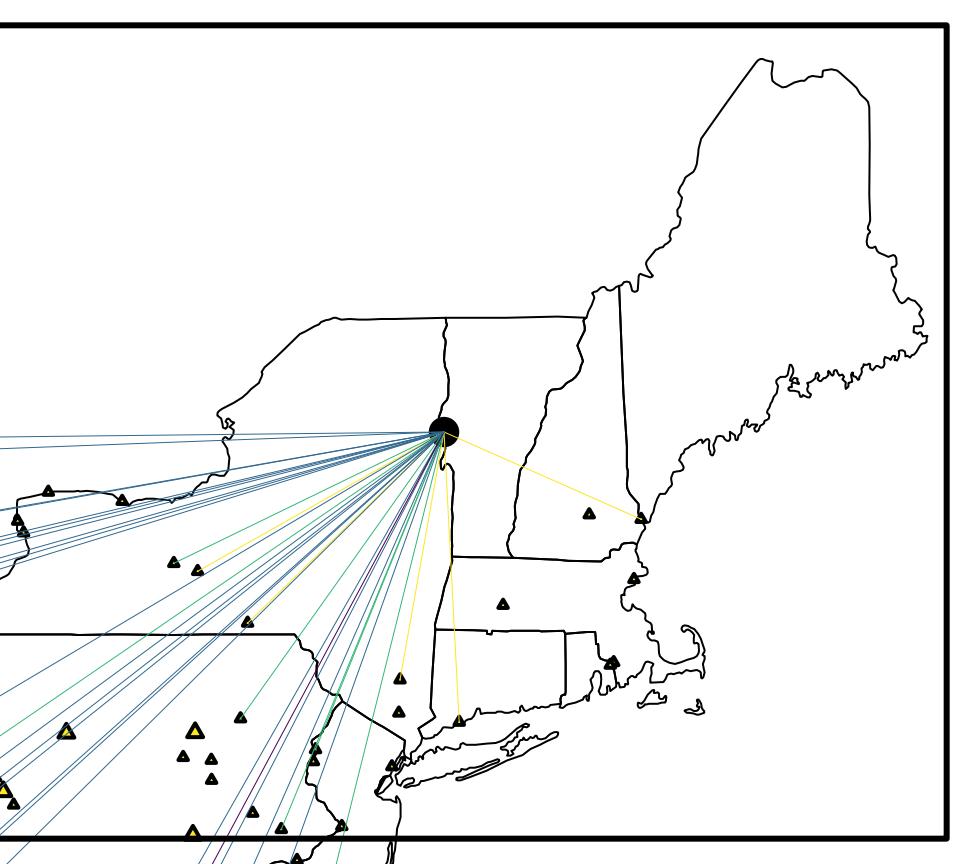
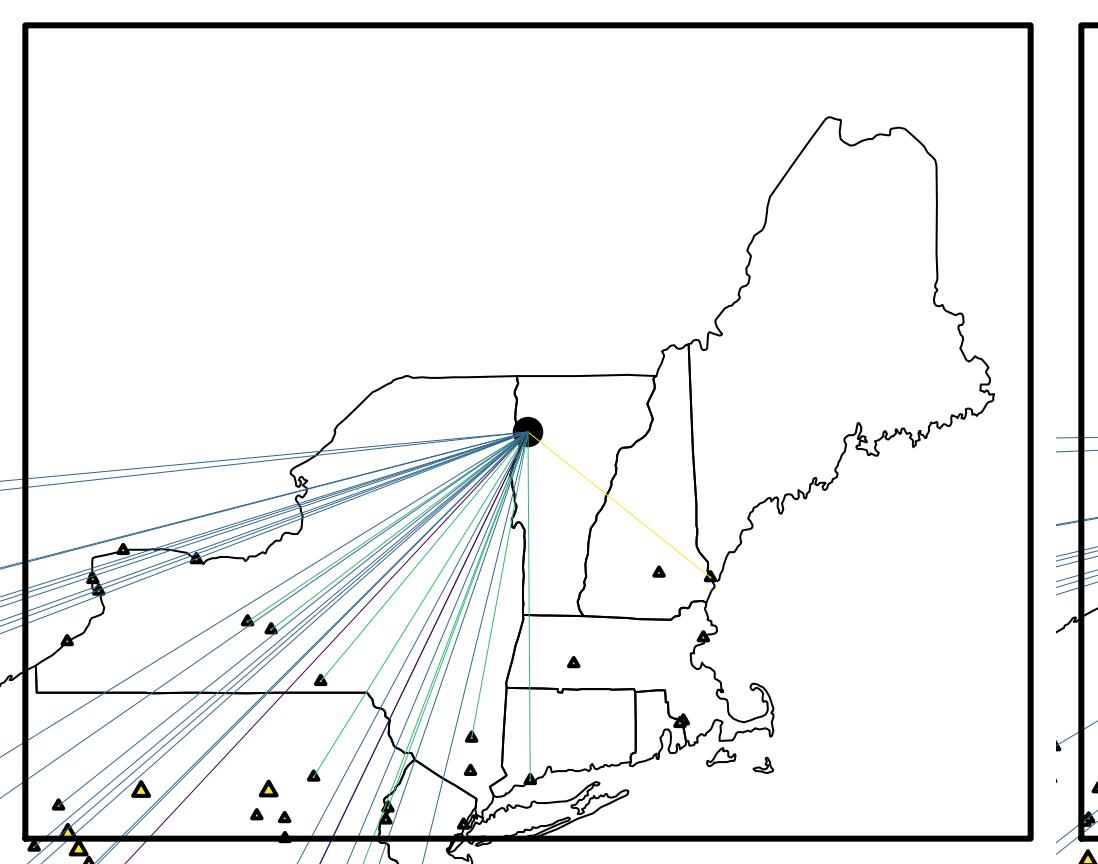


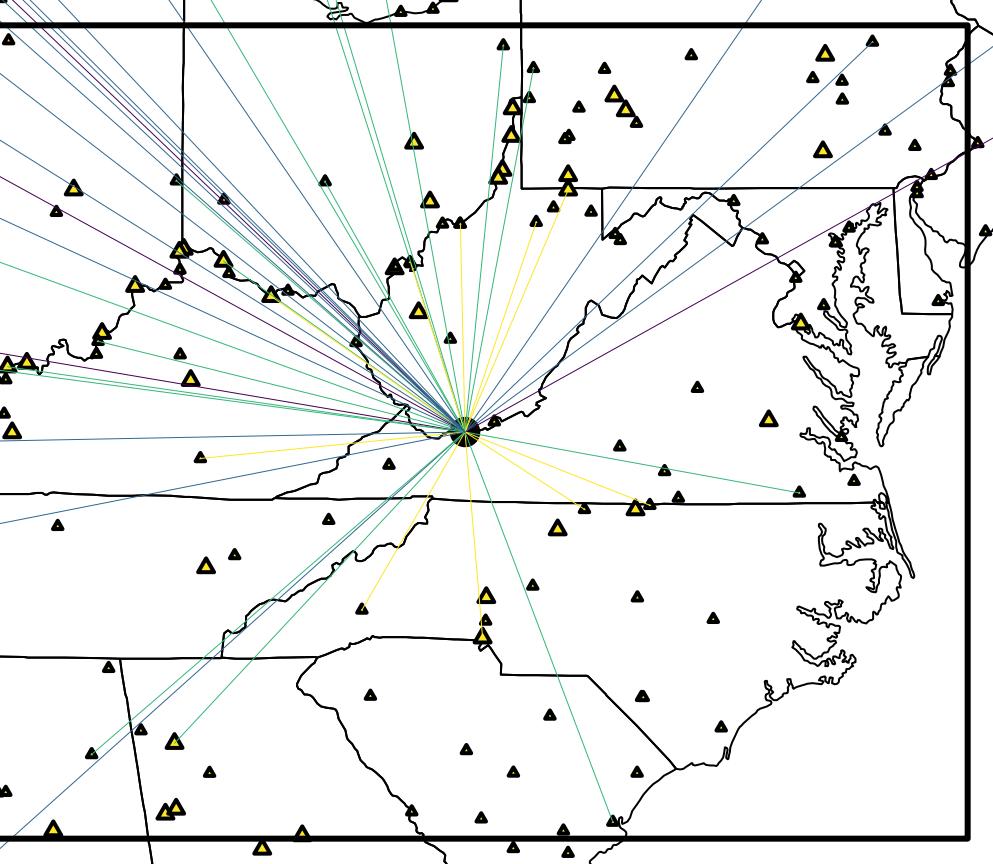
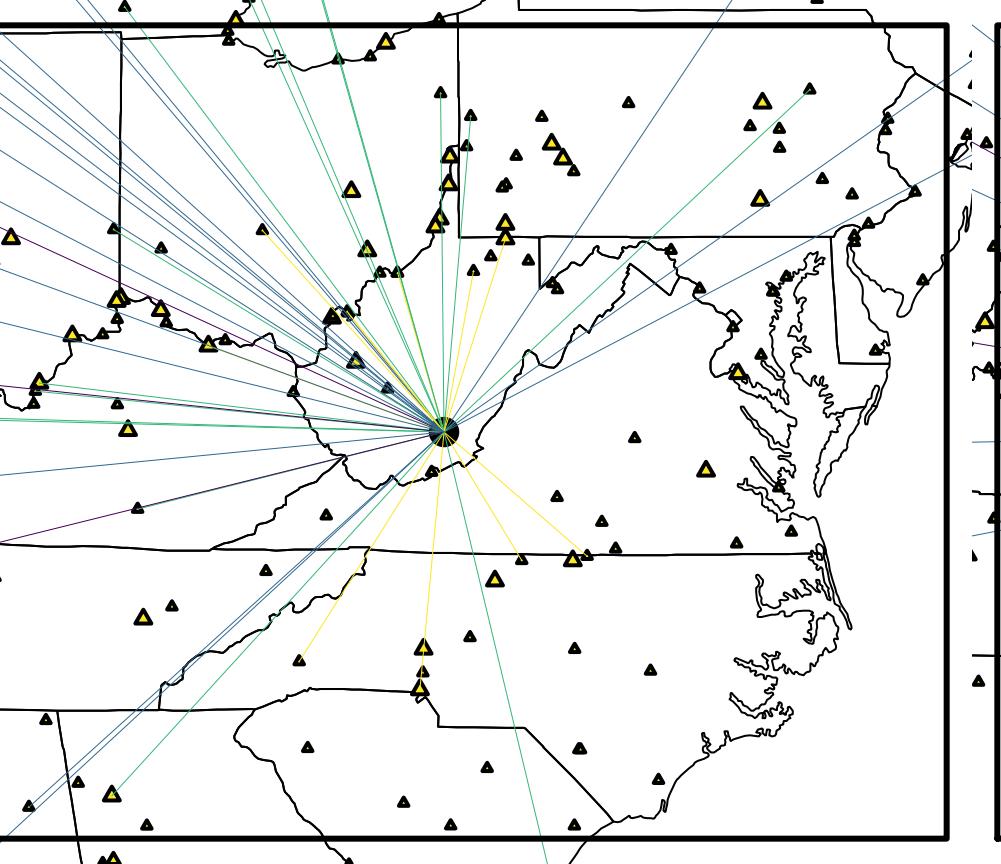
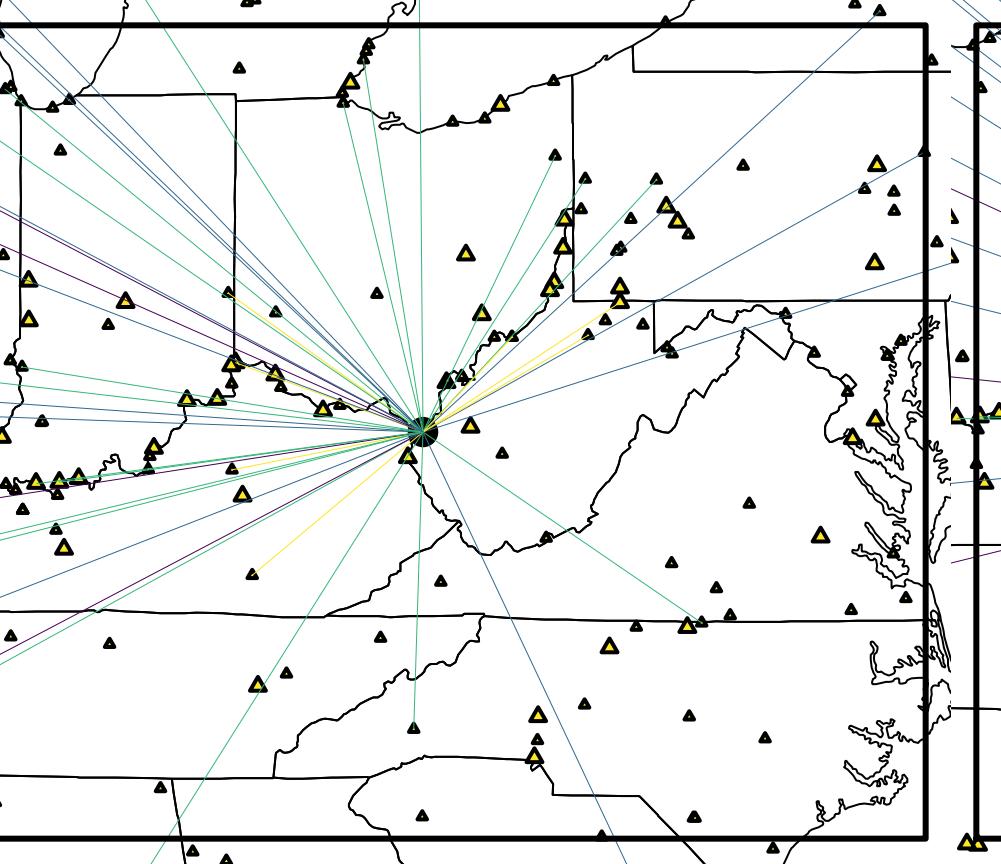
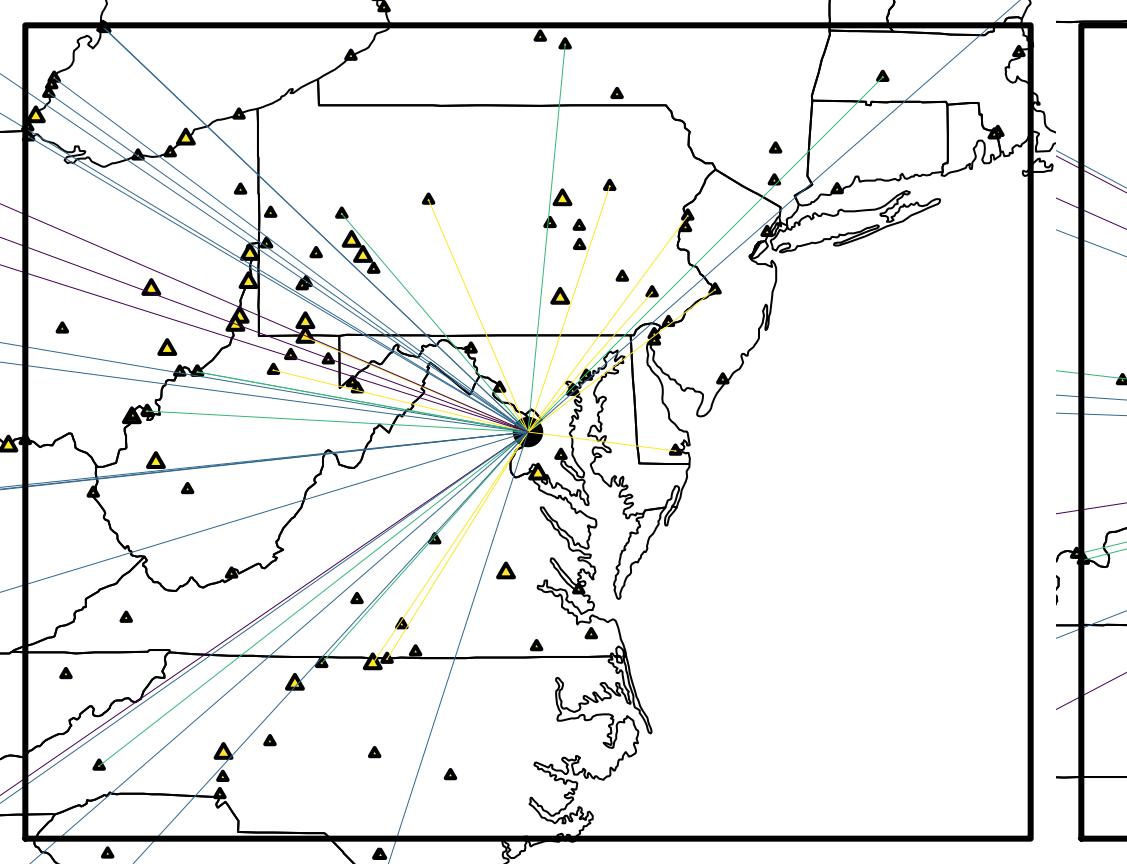
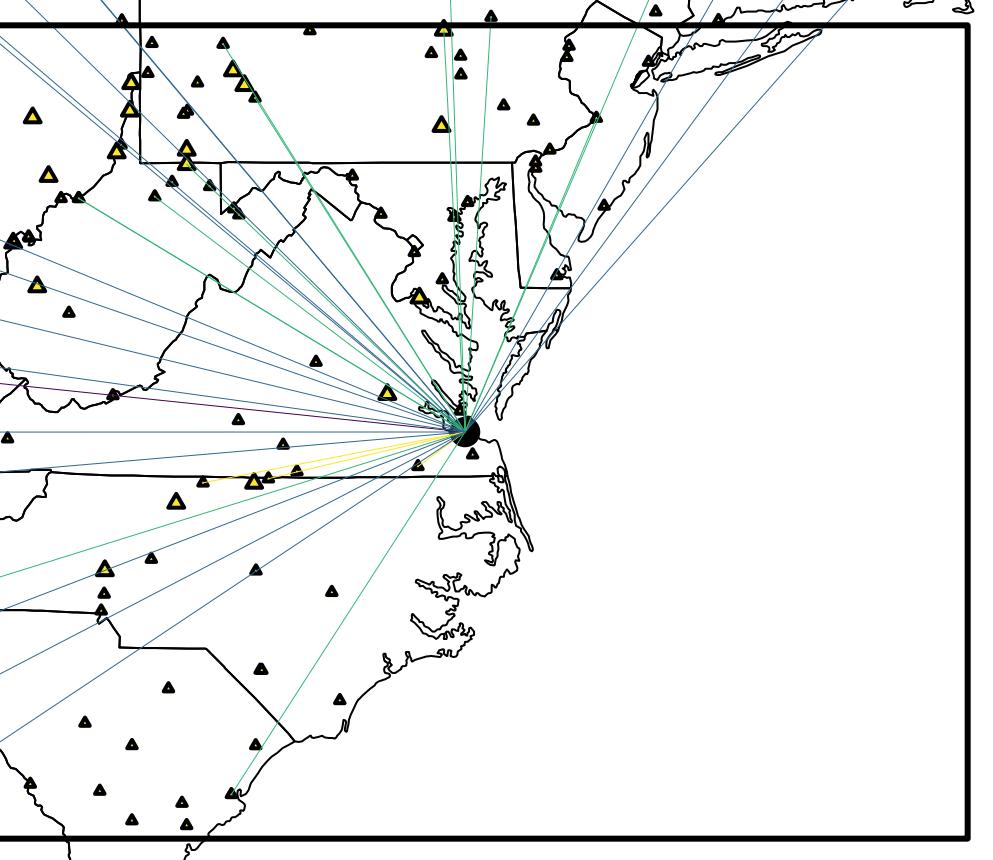
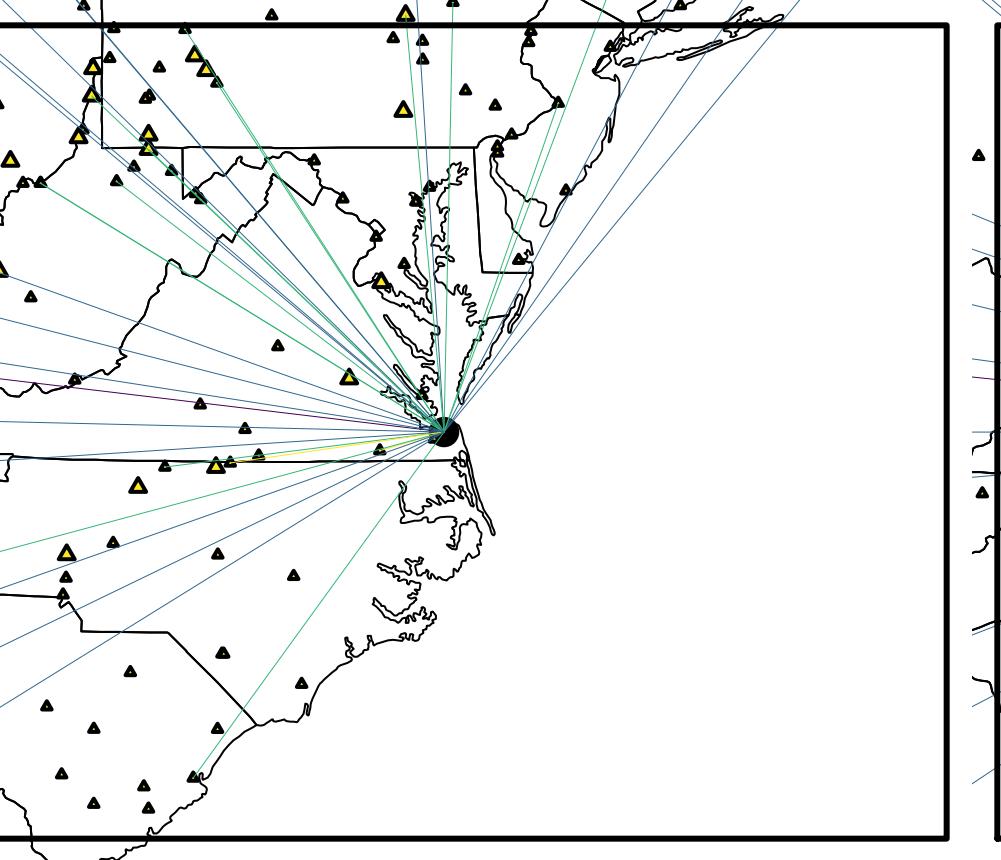
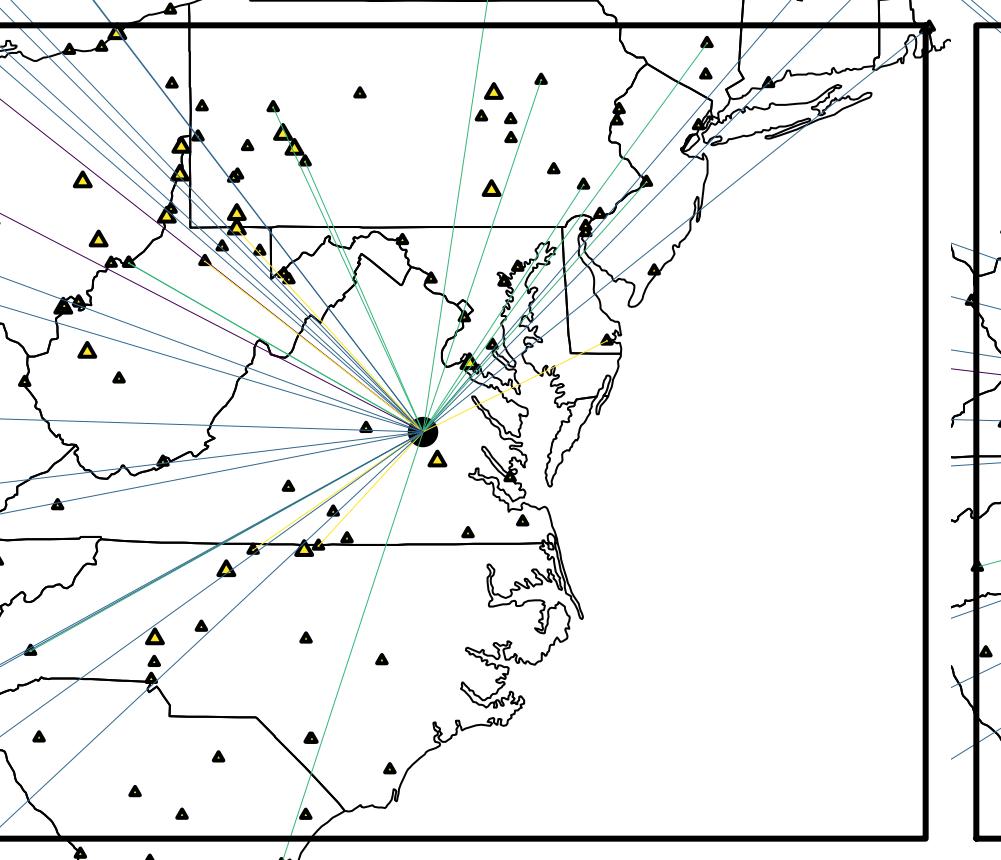
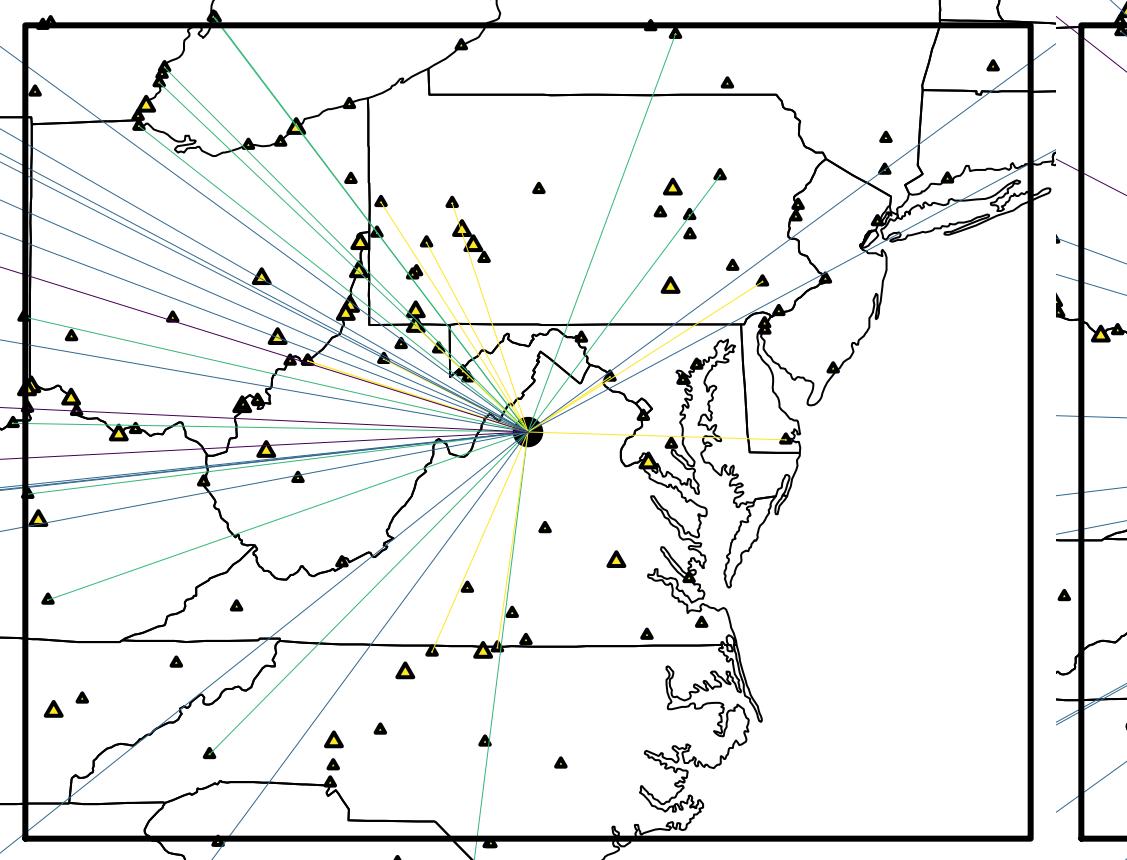


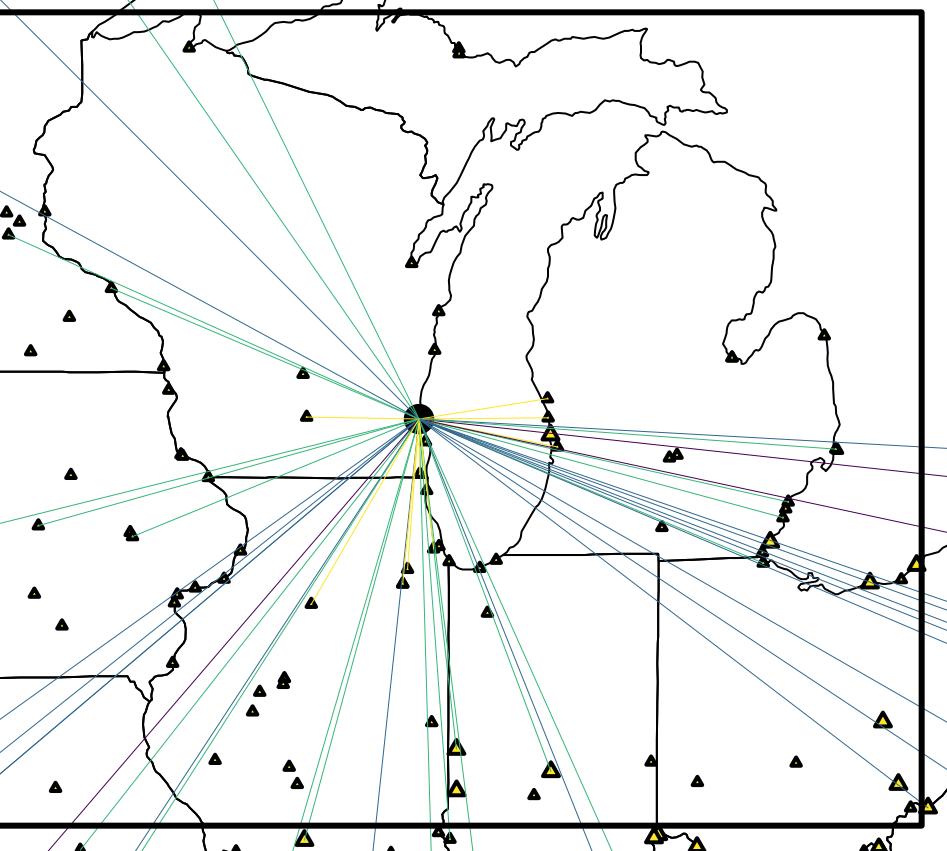
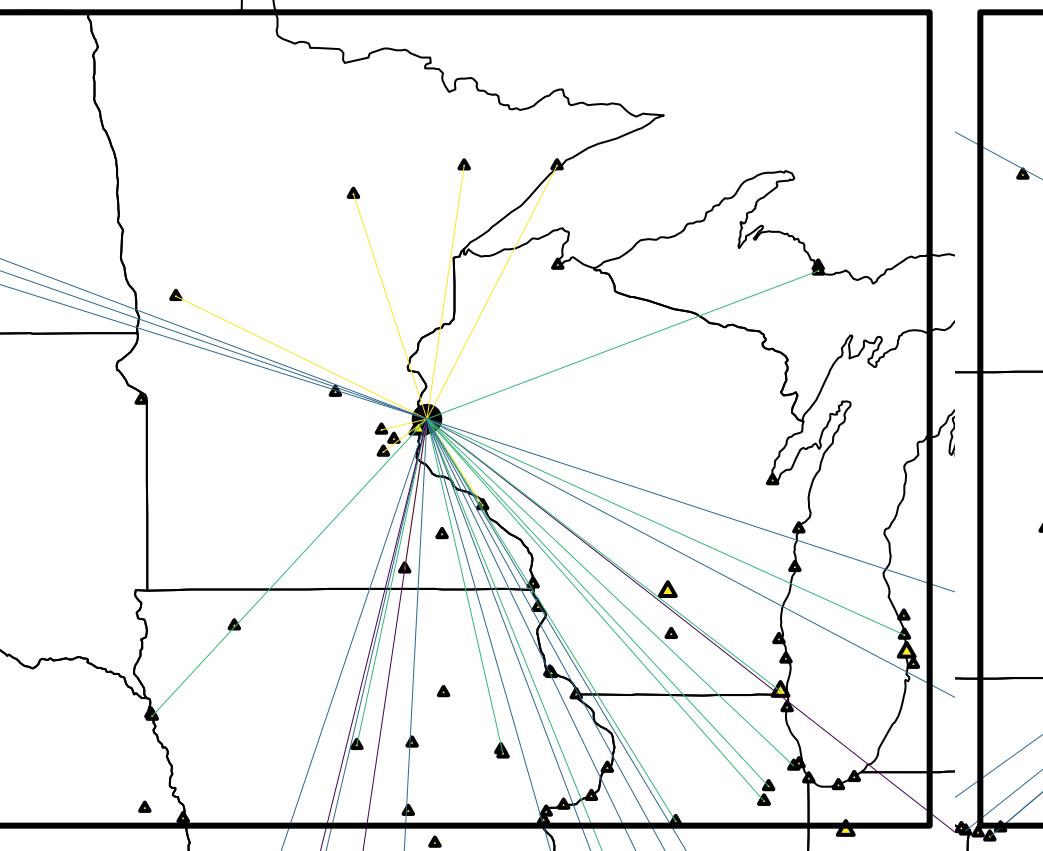
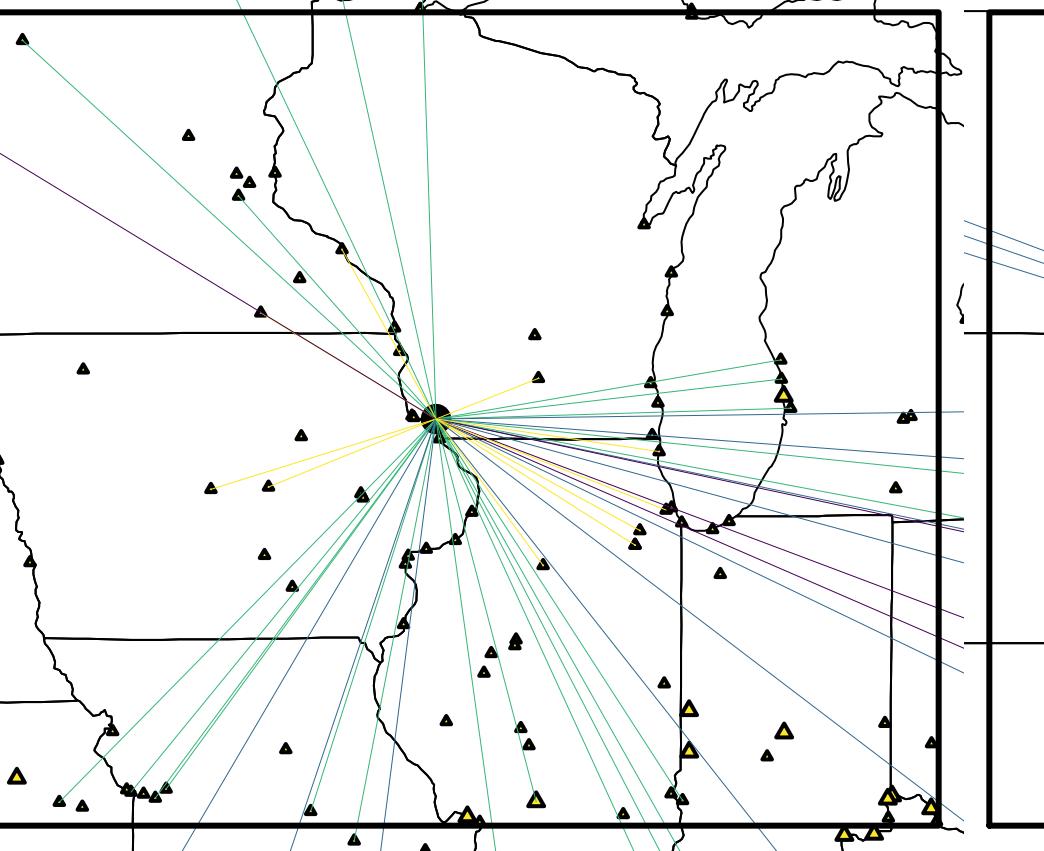
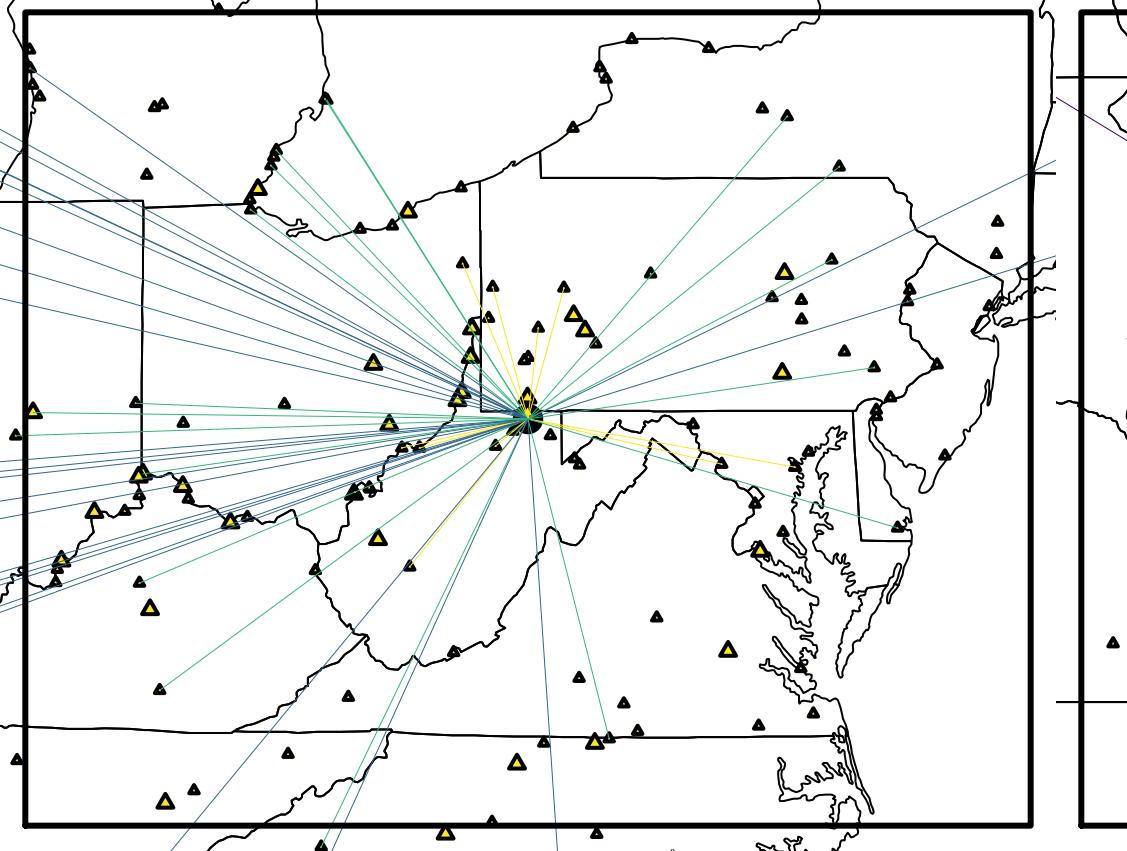
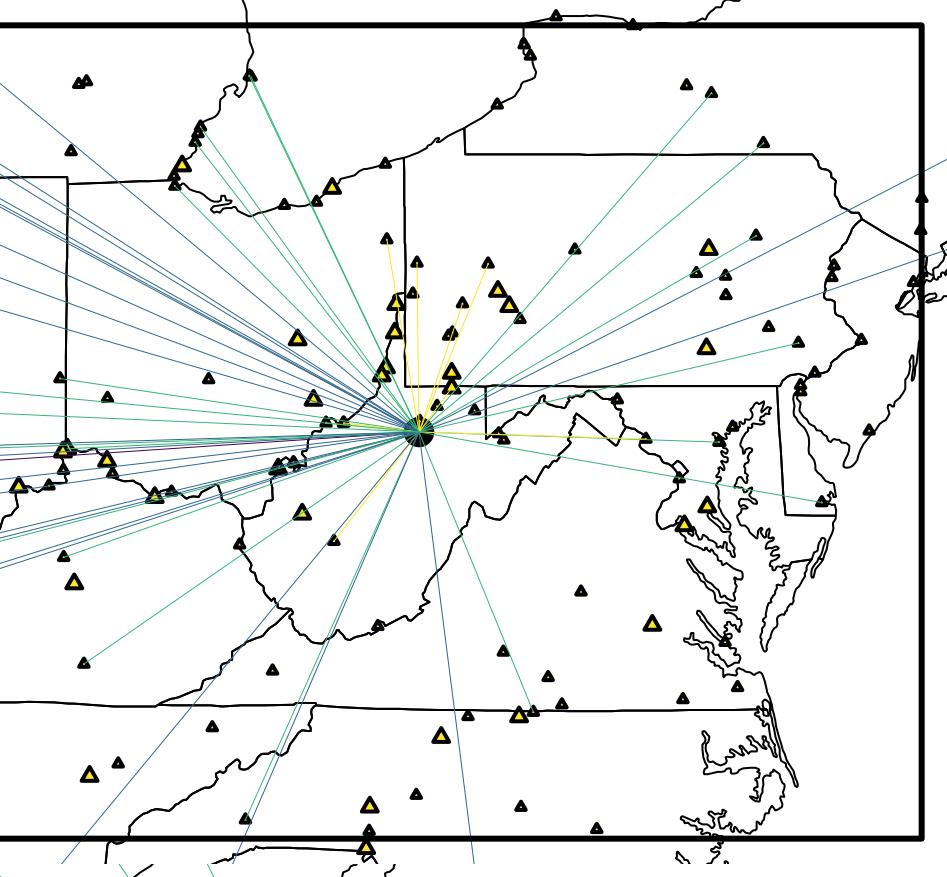
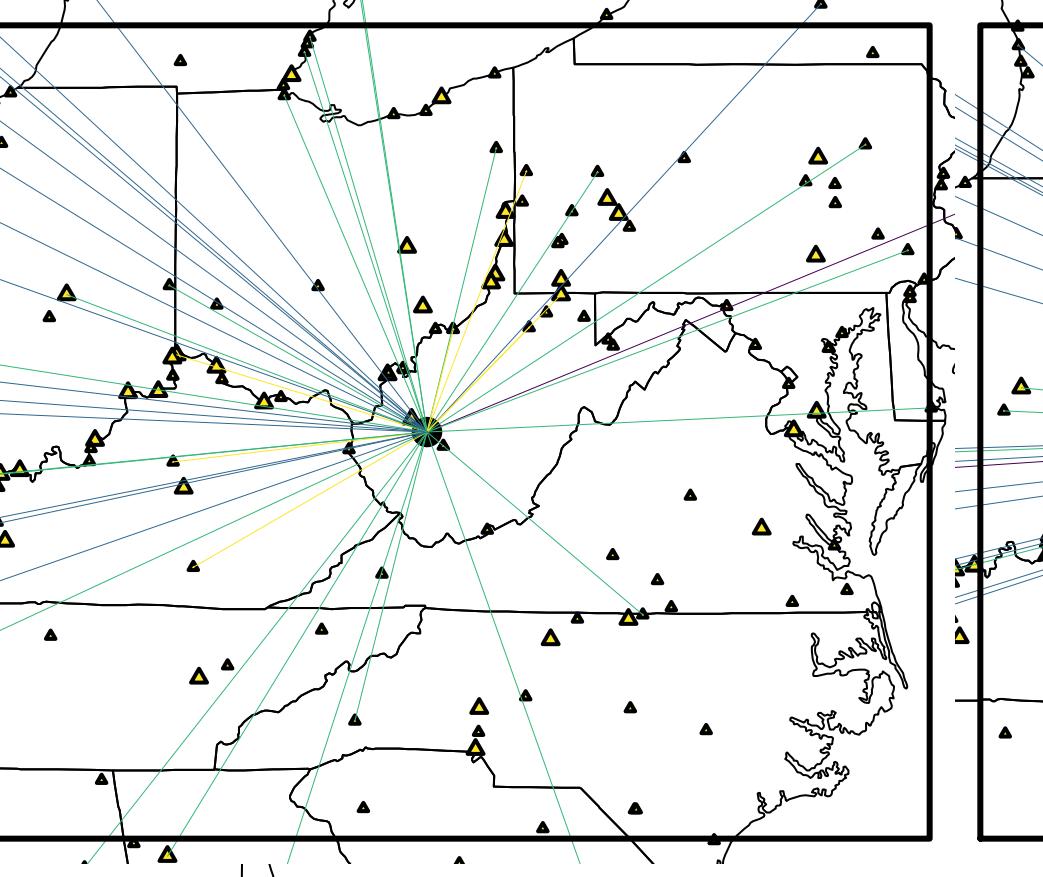
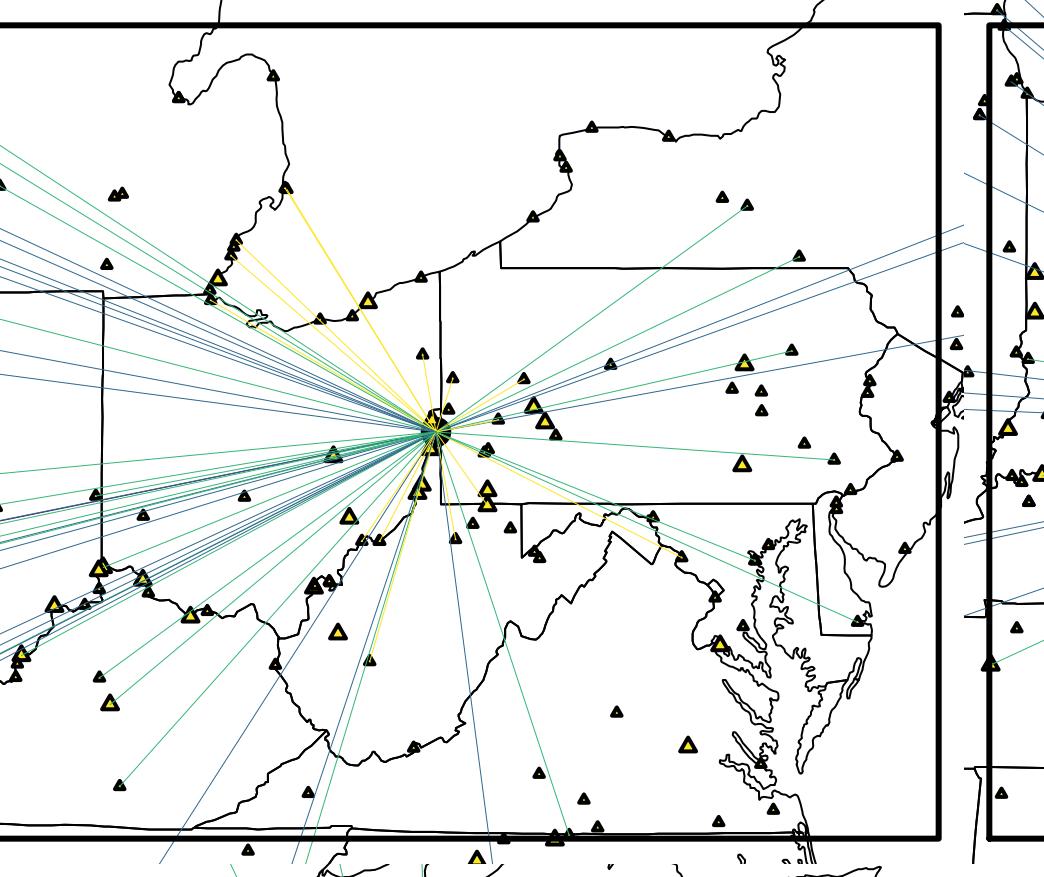
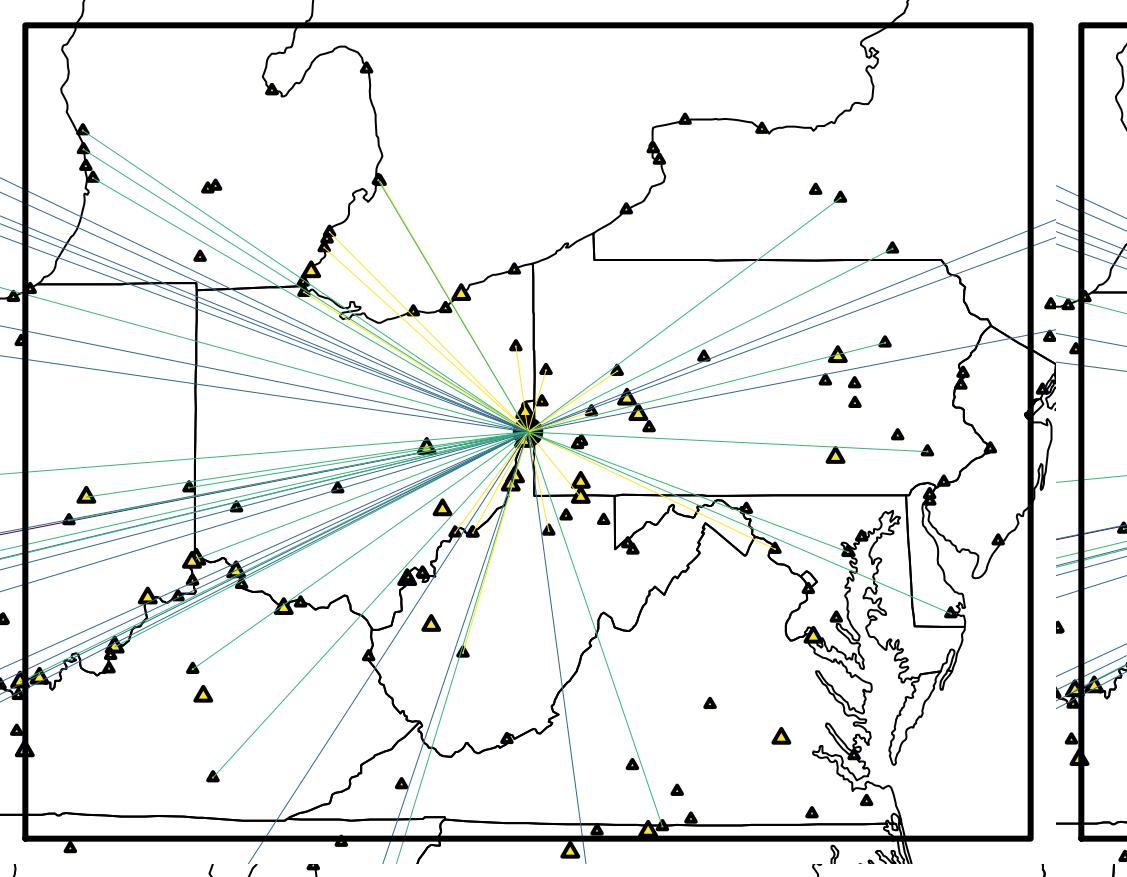


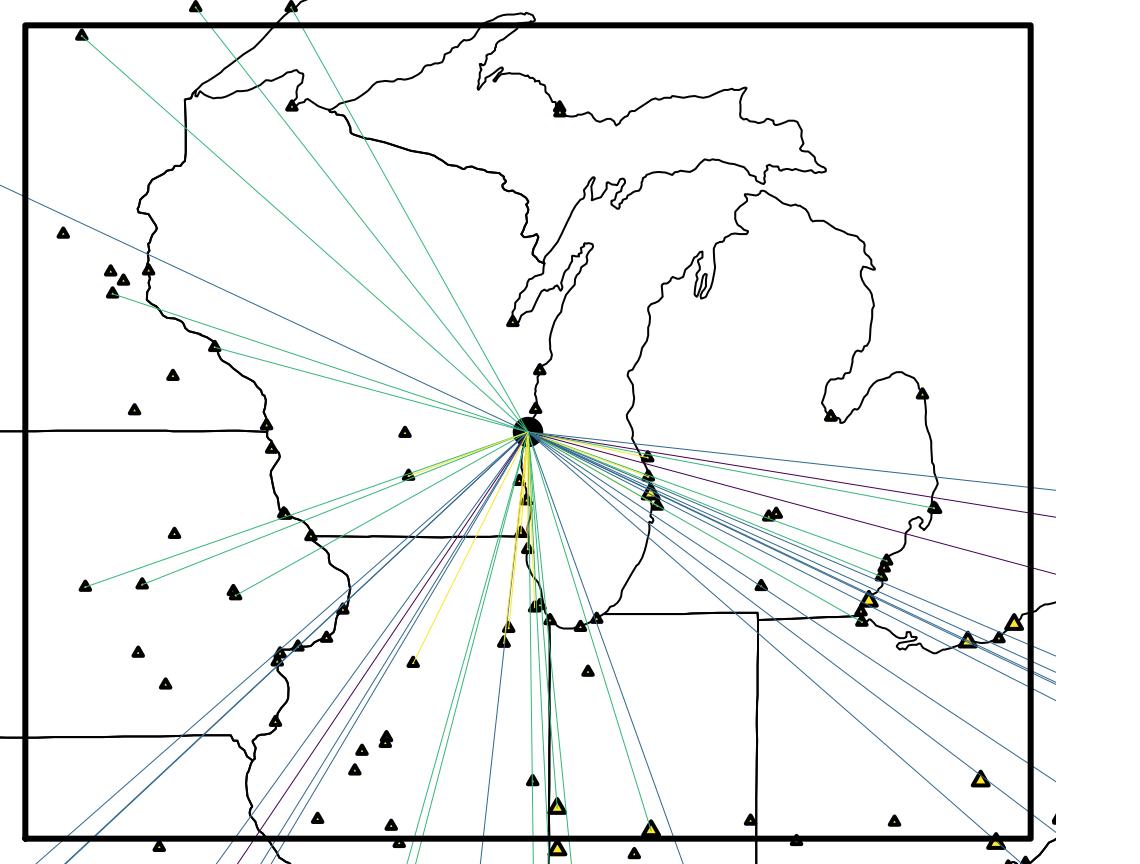
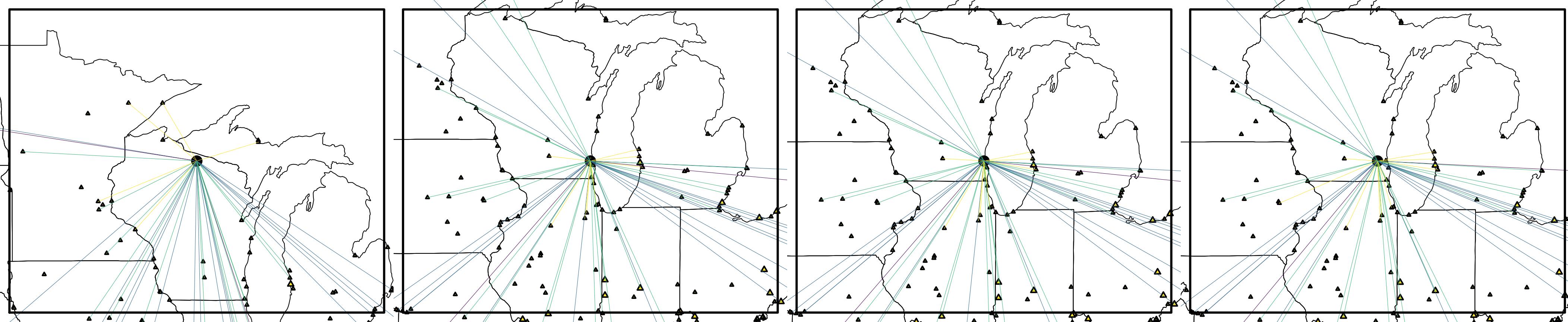




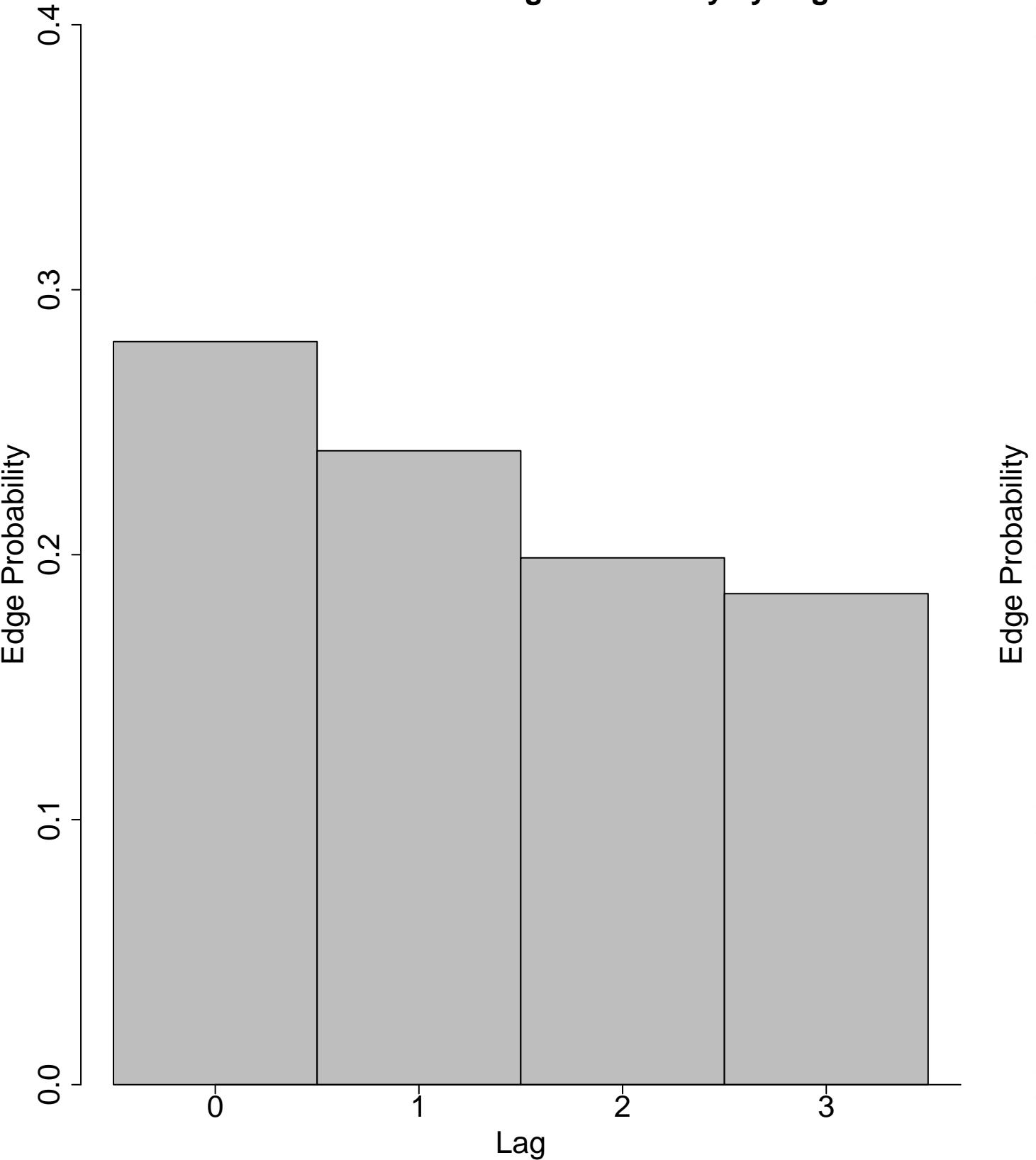




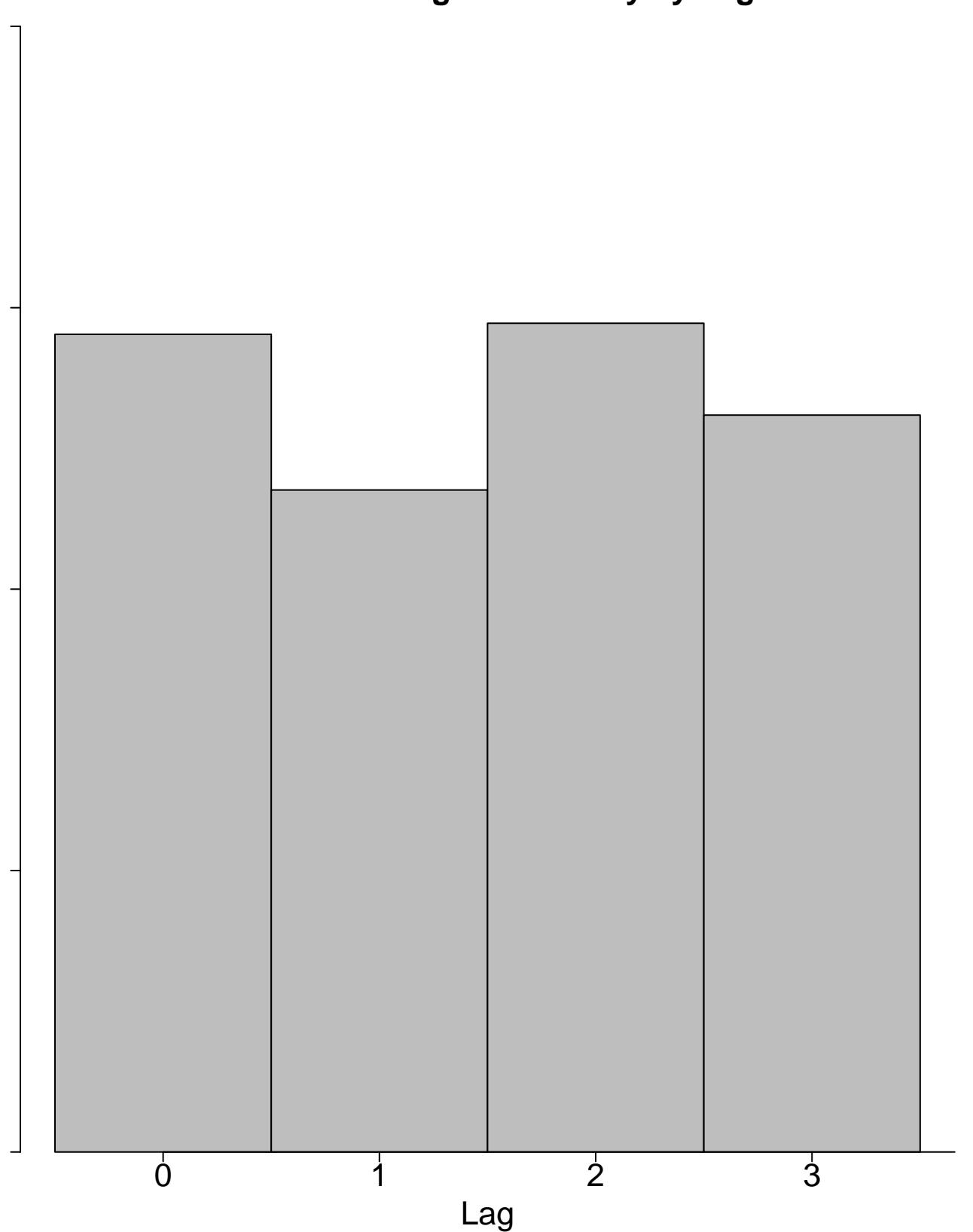




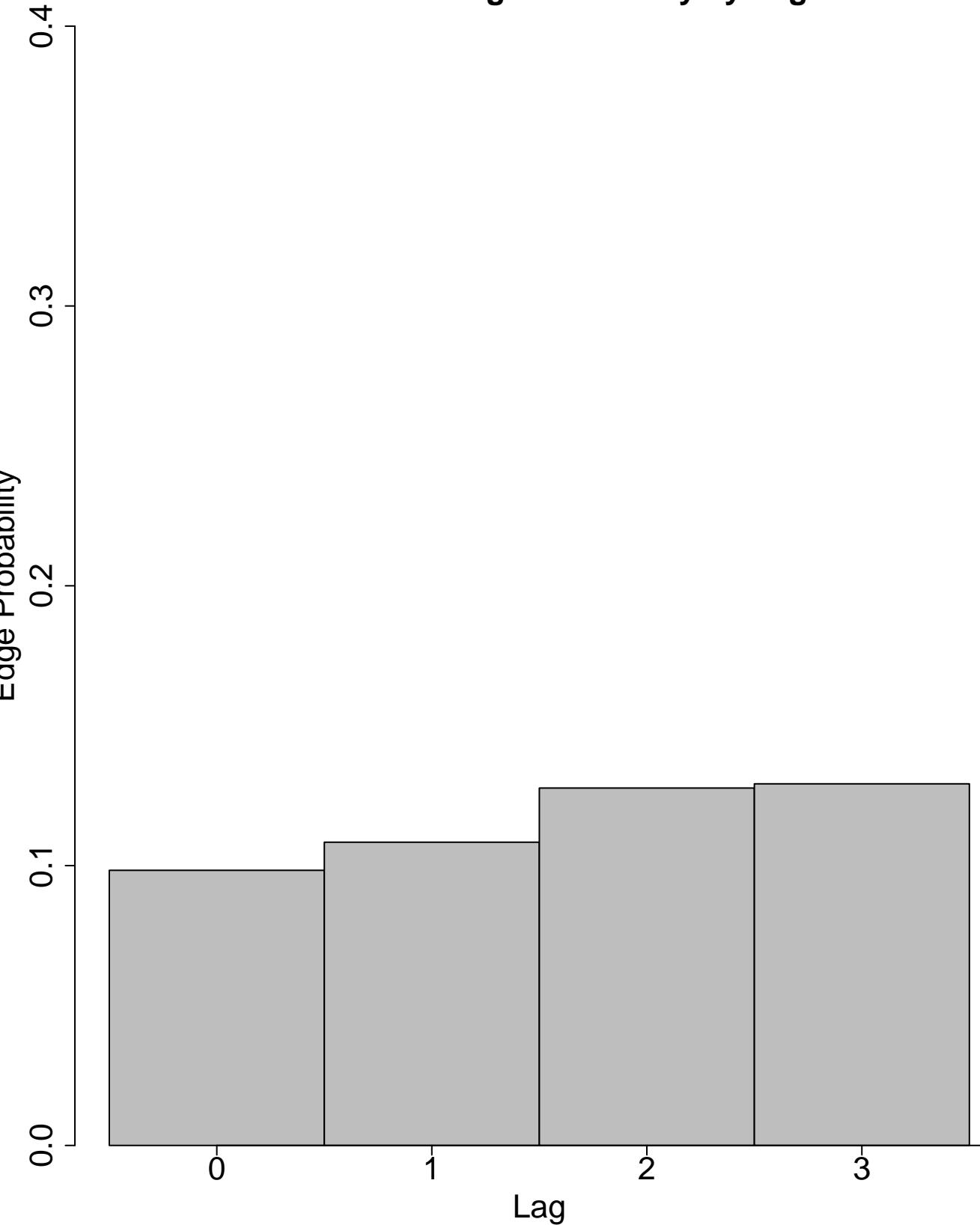
**IndustrialMidwest: Edge Probability by Lag**



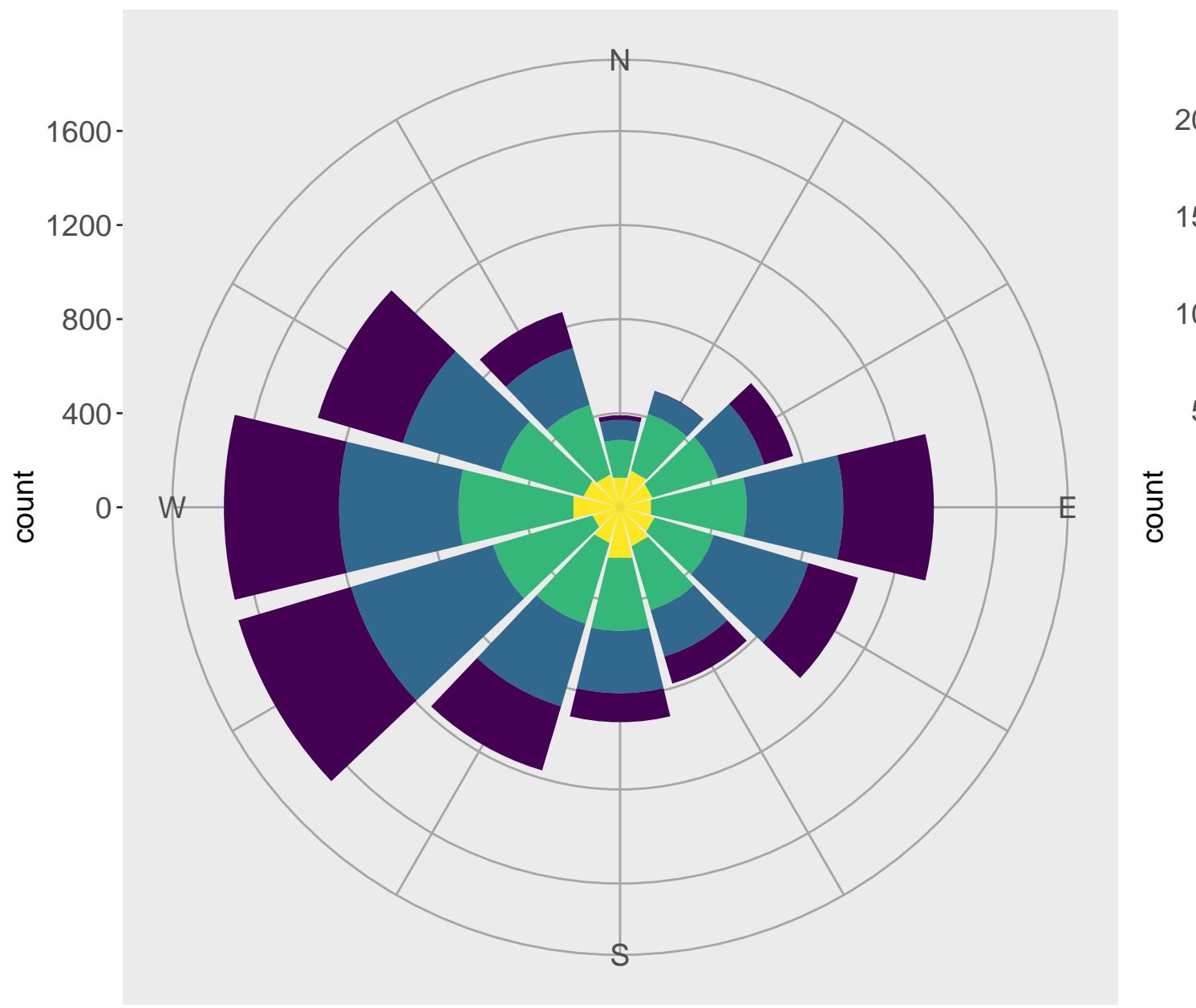
**Northeast: Edge Probability by Lag**



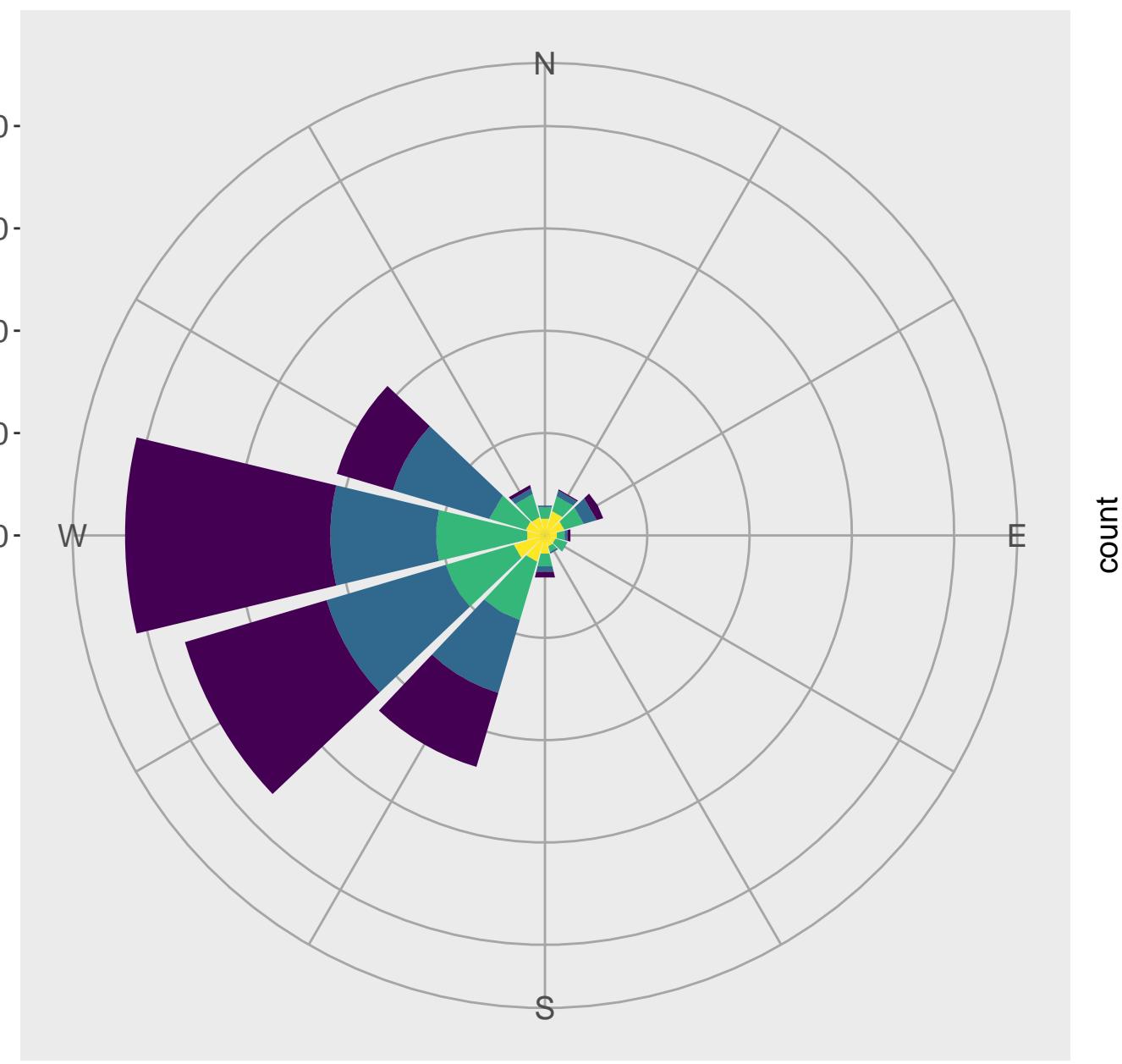
**Southeast: Edge Probability by Lag**



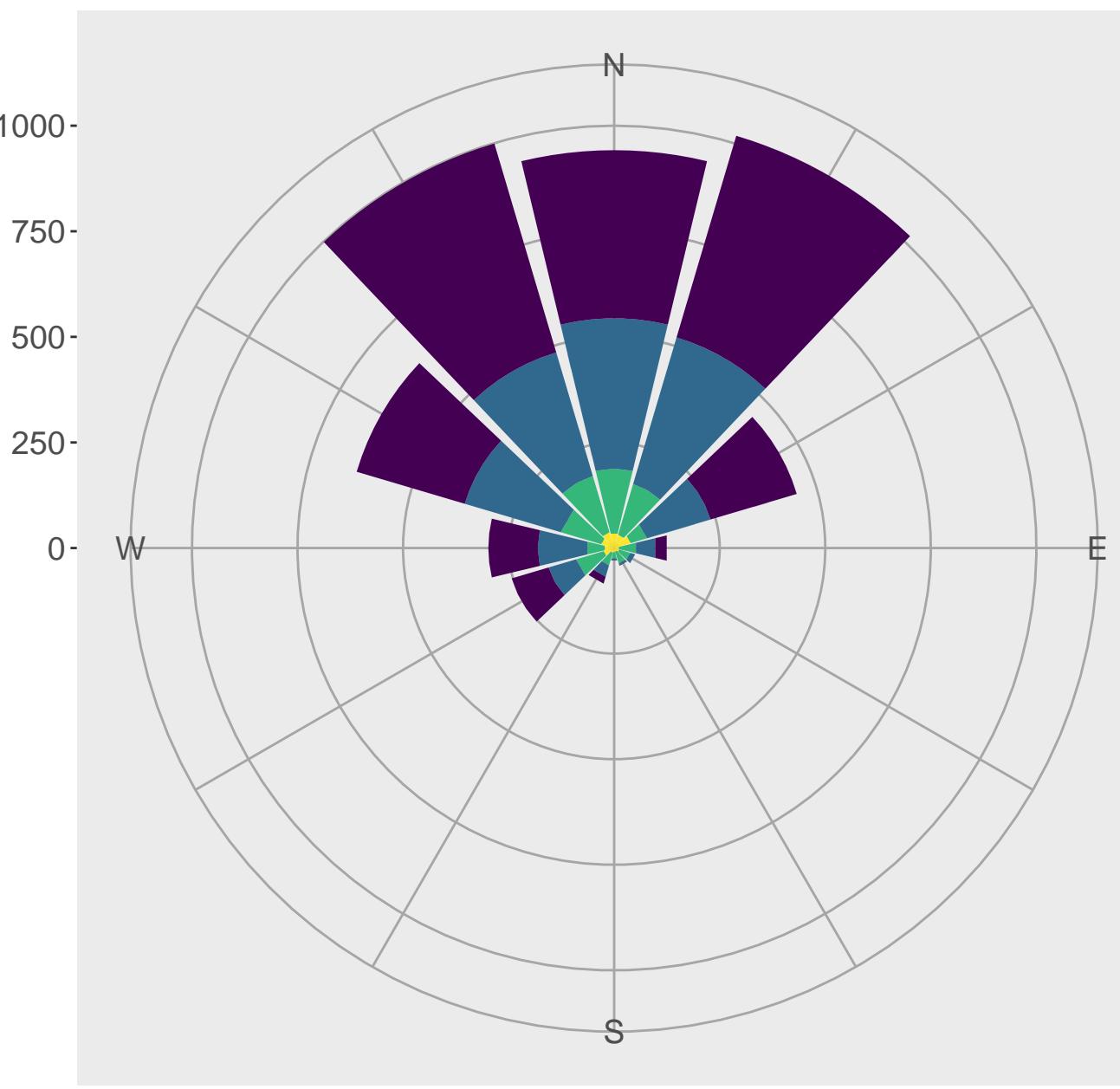
**Edge counts by distance/direction to source**  
Industrial Midwest receptors



**Edge counts by distance/direction to source**  
Northeast receptors



**Edge counts by distance/direction to source**  
Southeast receptors

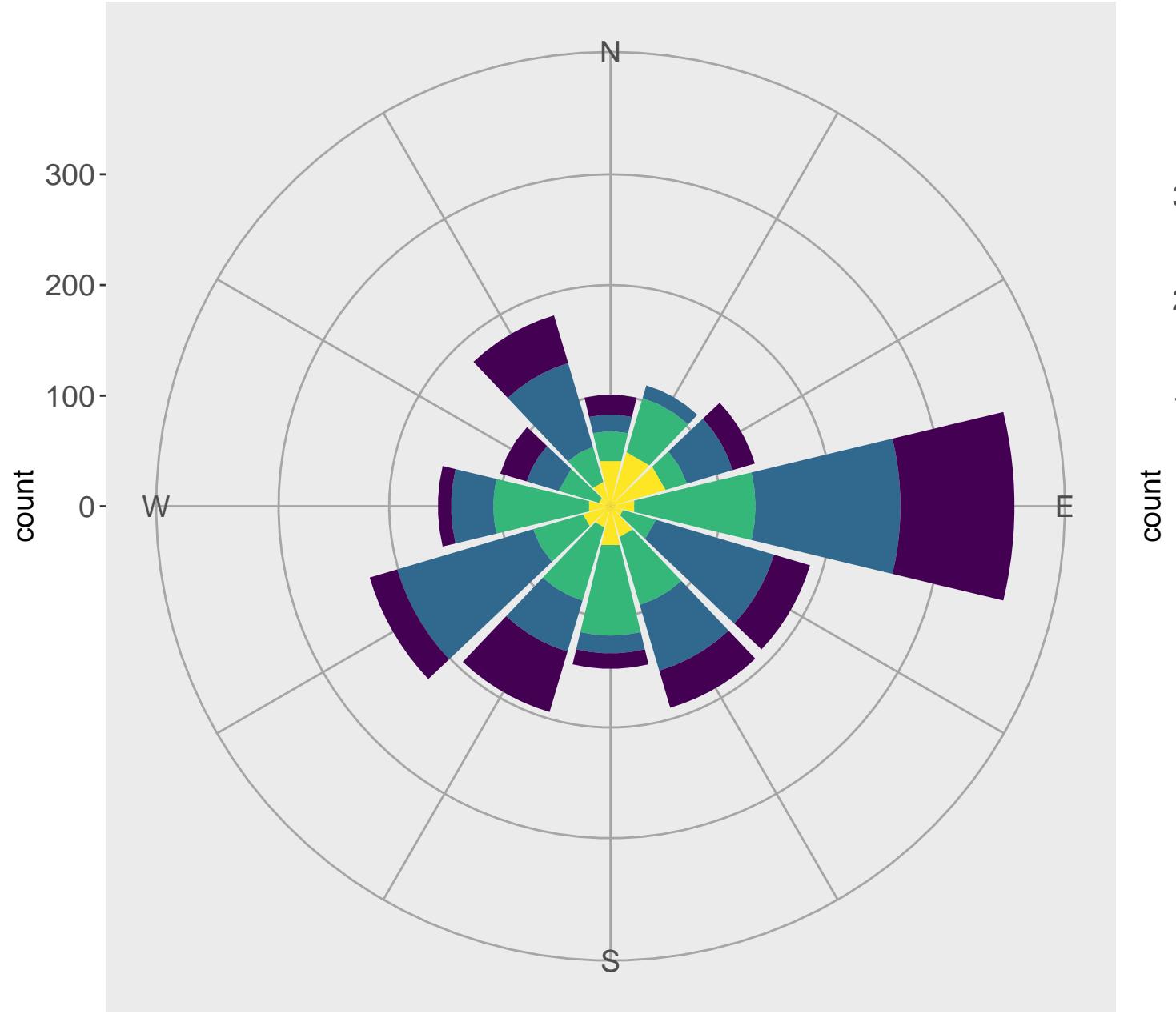


Distance to Source (km)     750–1000     500–750     250–500     0–250

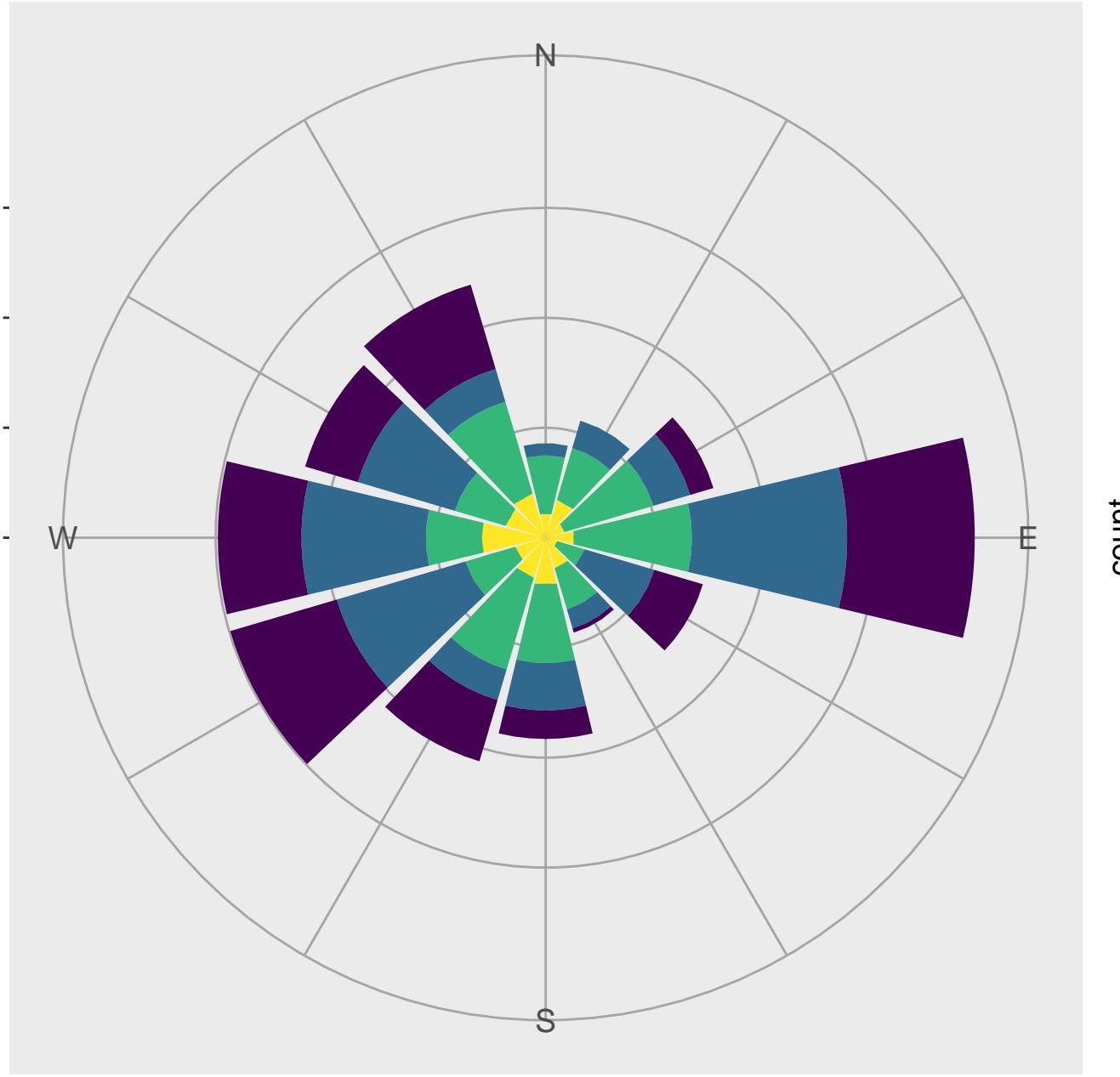
Distance to Source (km)     750–1000     500–750     250–500     0–250

Distance to Source (km)     750–1000     500–750     250–500     0–250

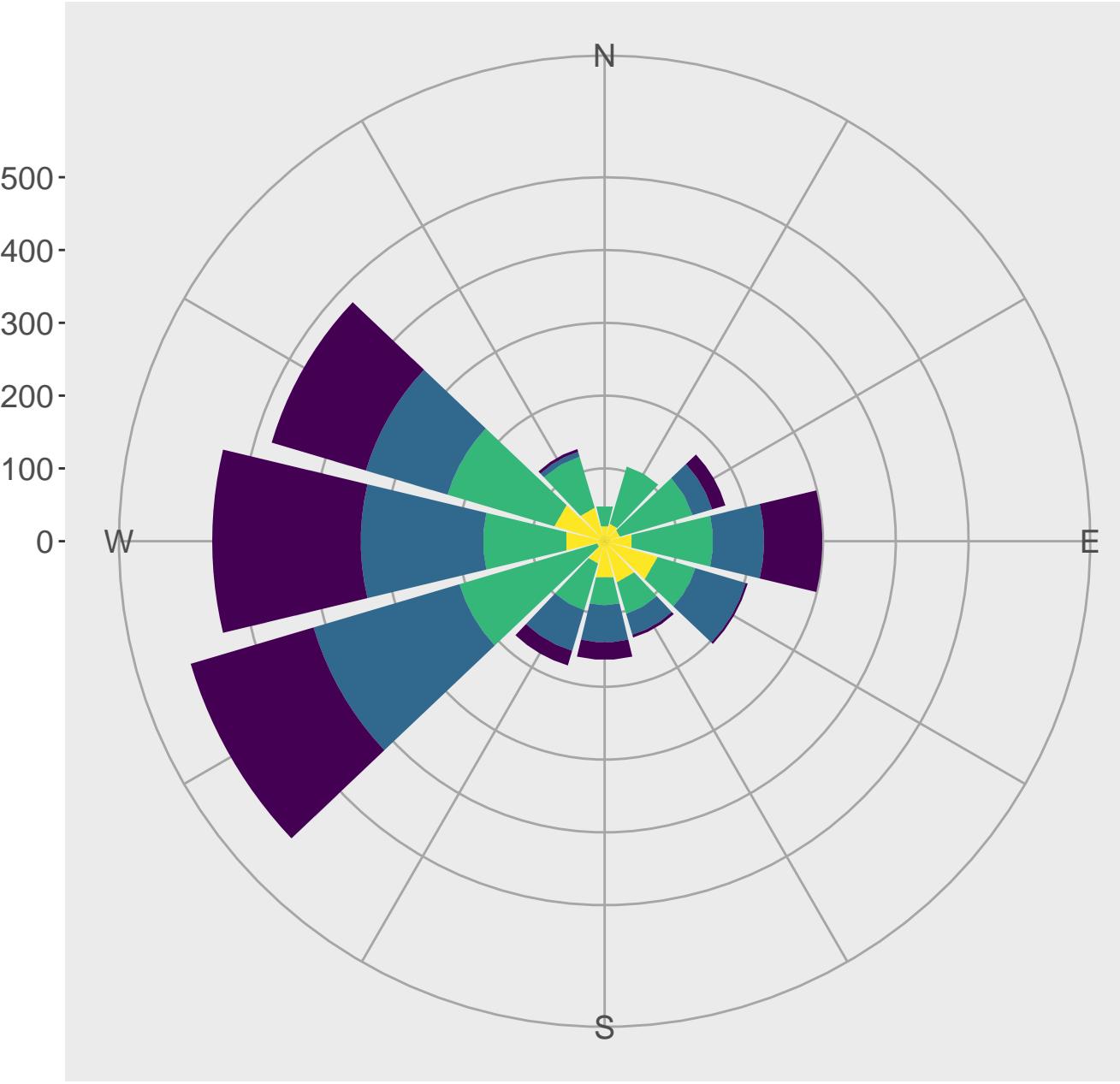
**Edge counts by distance/direction to source  
Illinois receptors**



**Edge counts by distance/direction to source  
Indiana receptors**



**Edge counts by distance/direction to source  
Ohio receptors**

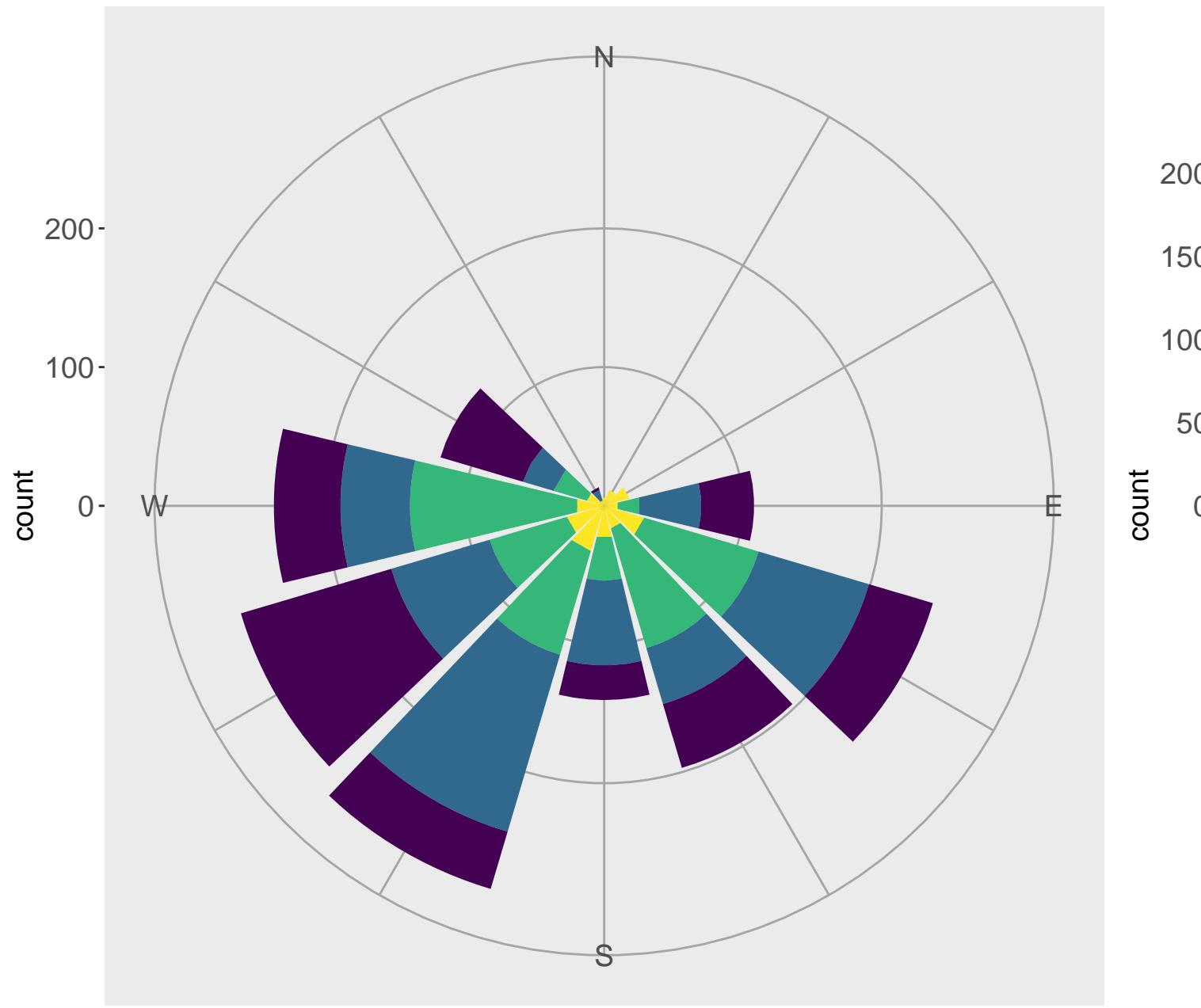


Distance to Source (km)  750–1000  500–750  250–500  0–250

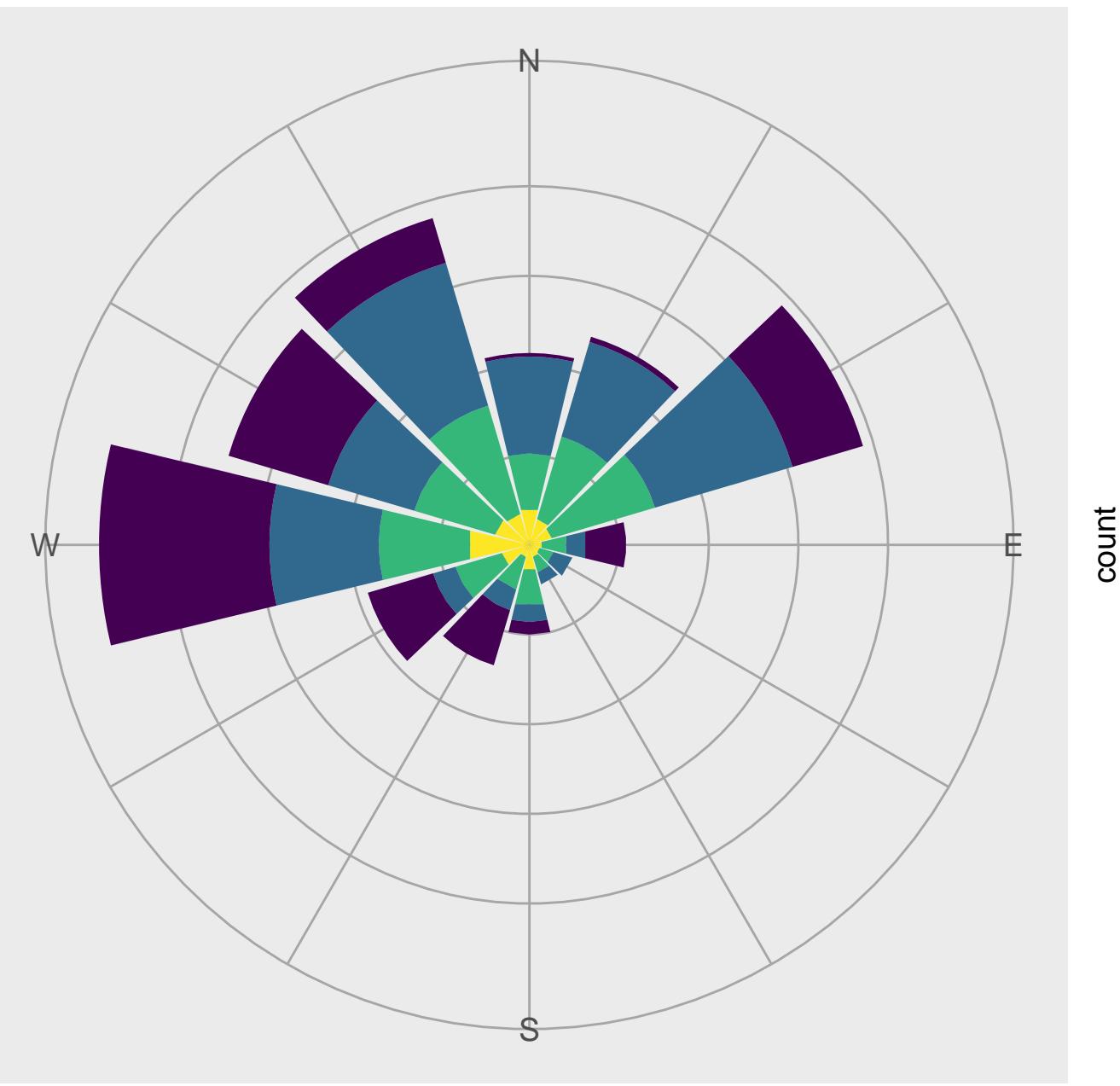
Distance to Source (km)  750–1000  500–750  250–500  0–250

Distance to Source (km)  750–1000  500–750  250–500  0–250

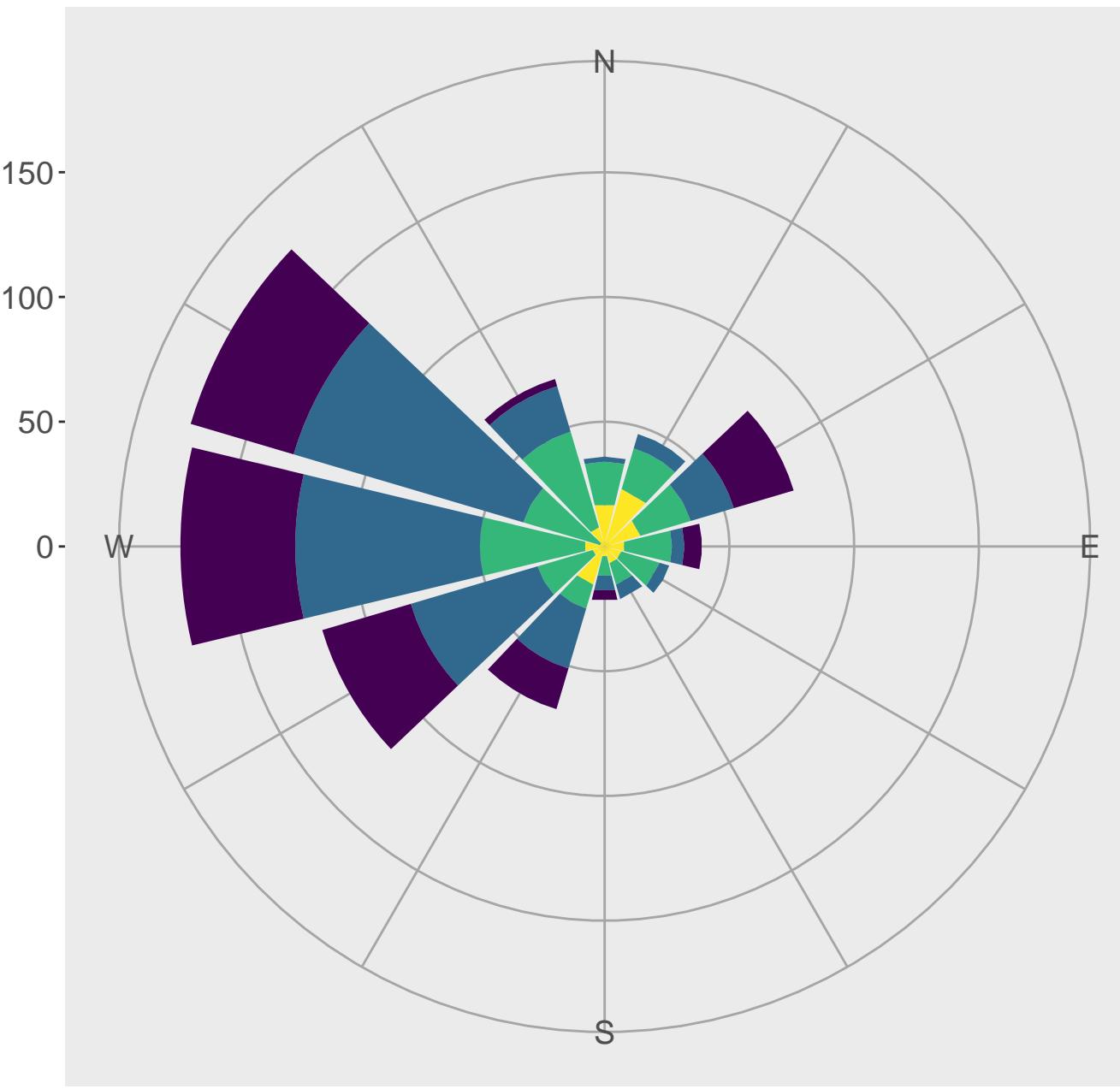
**Edge counts by distance/direction to source**  
Michigan receptors



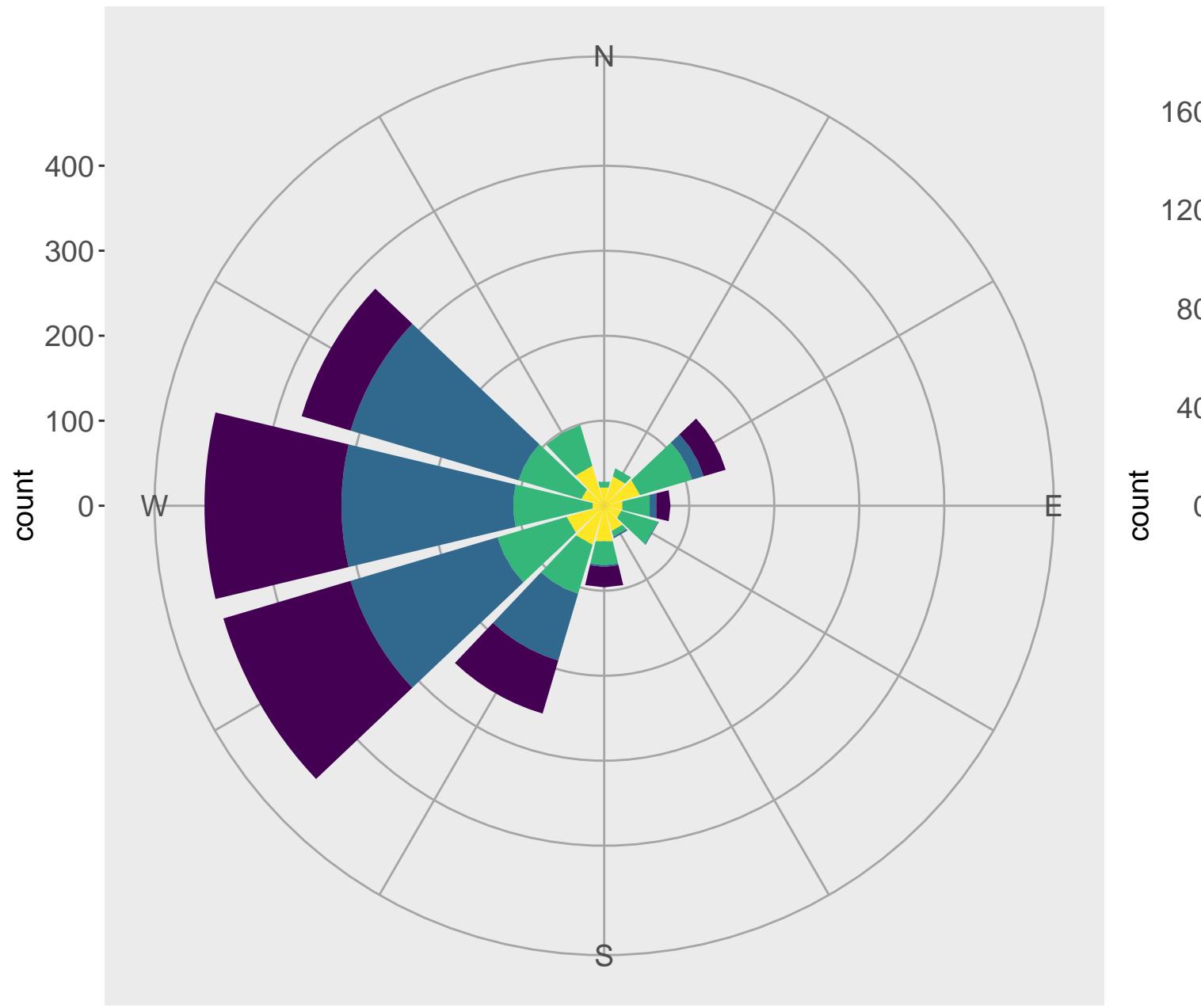
**Edge counts by distance/direction to source**  
Kentucky receptors



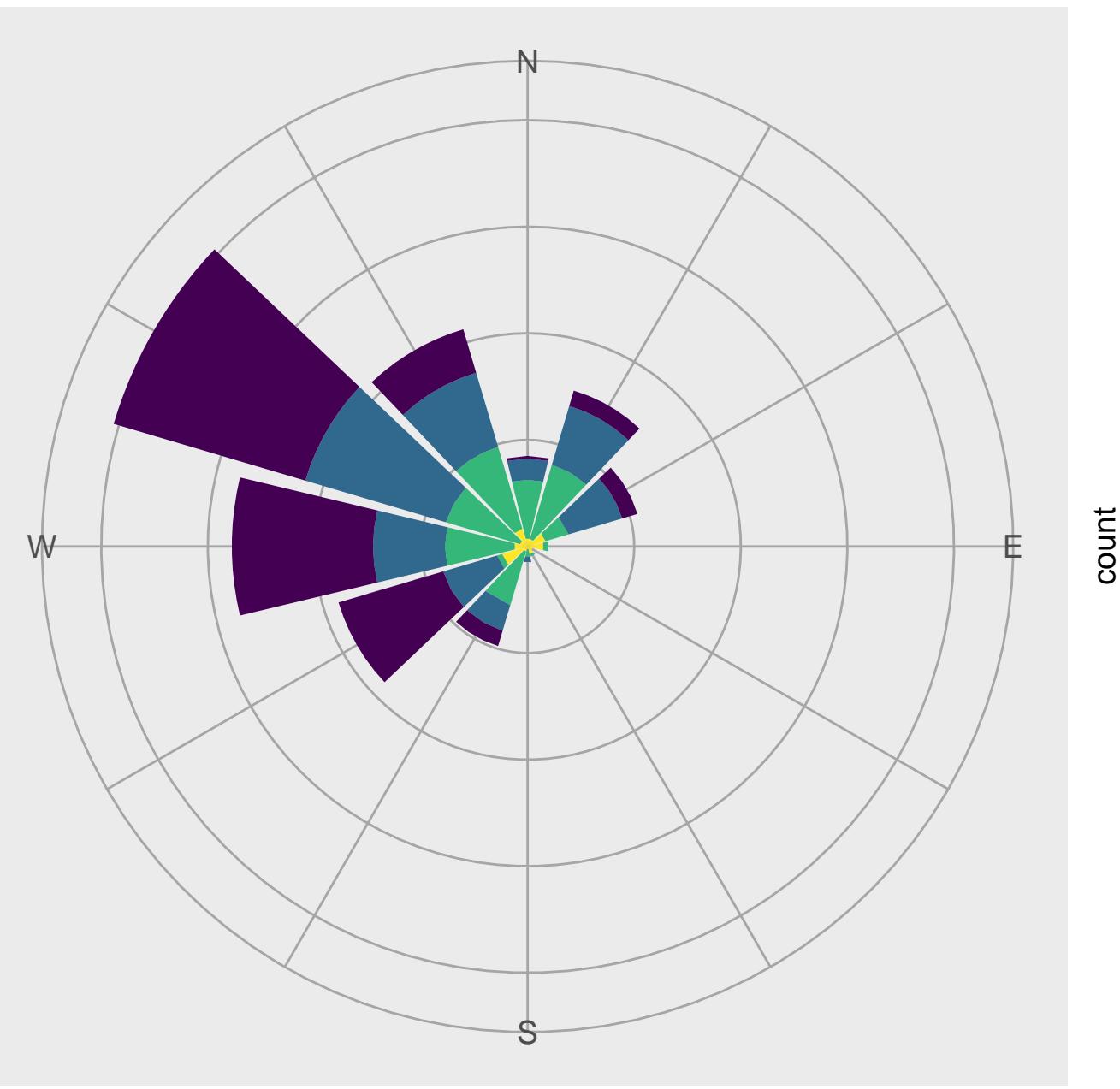
**Edge counts by distance/direction to source**  
West Virginia receptors



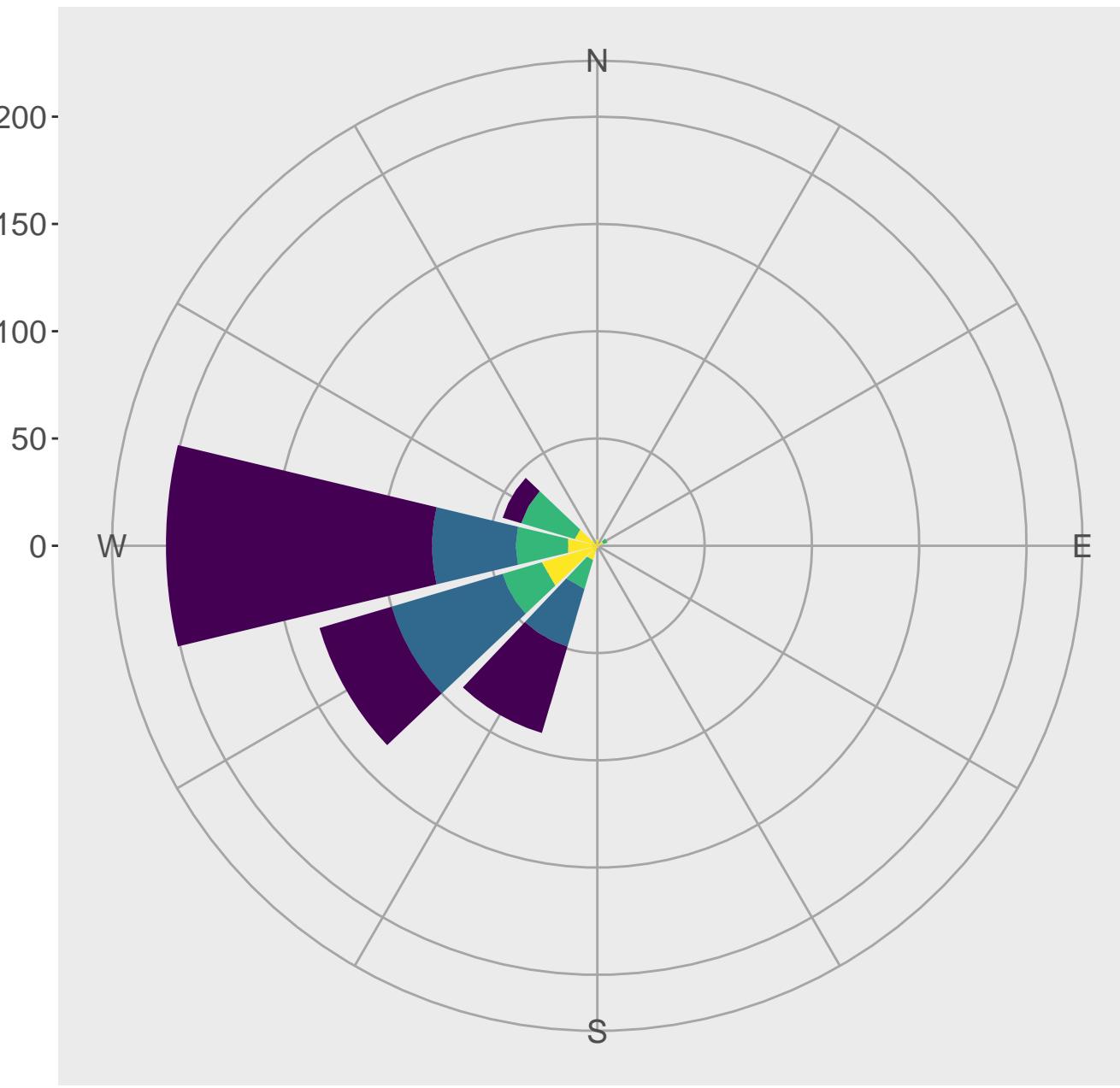
**Edge counts by distance/direction to source**  
Pennsylvania receptors



**Edge counts by distance/direction to source**  
Virginia receptors



**Edge counts by distance/direction to source**  
Connecticut receptors

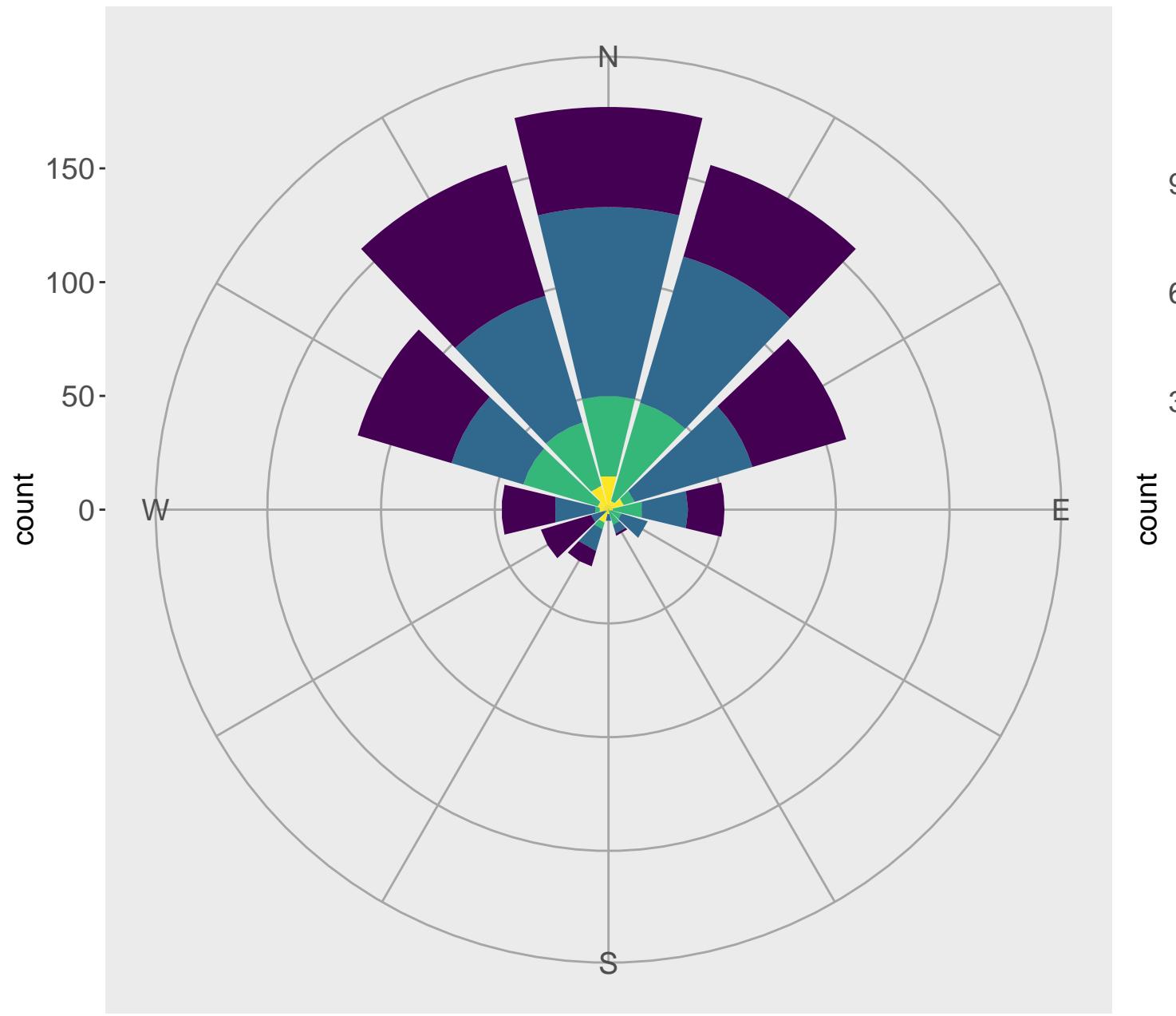


Distance to Source (km)    750–1000    500–750    250–500    0–250

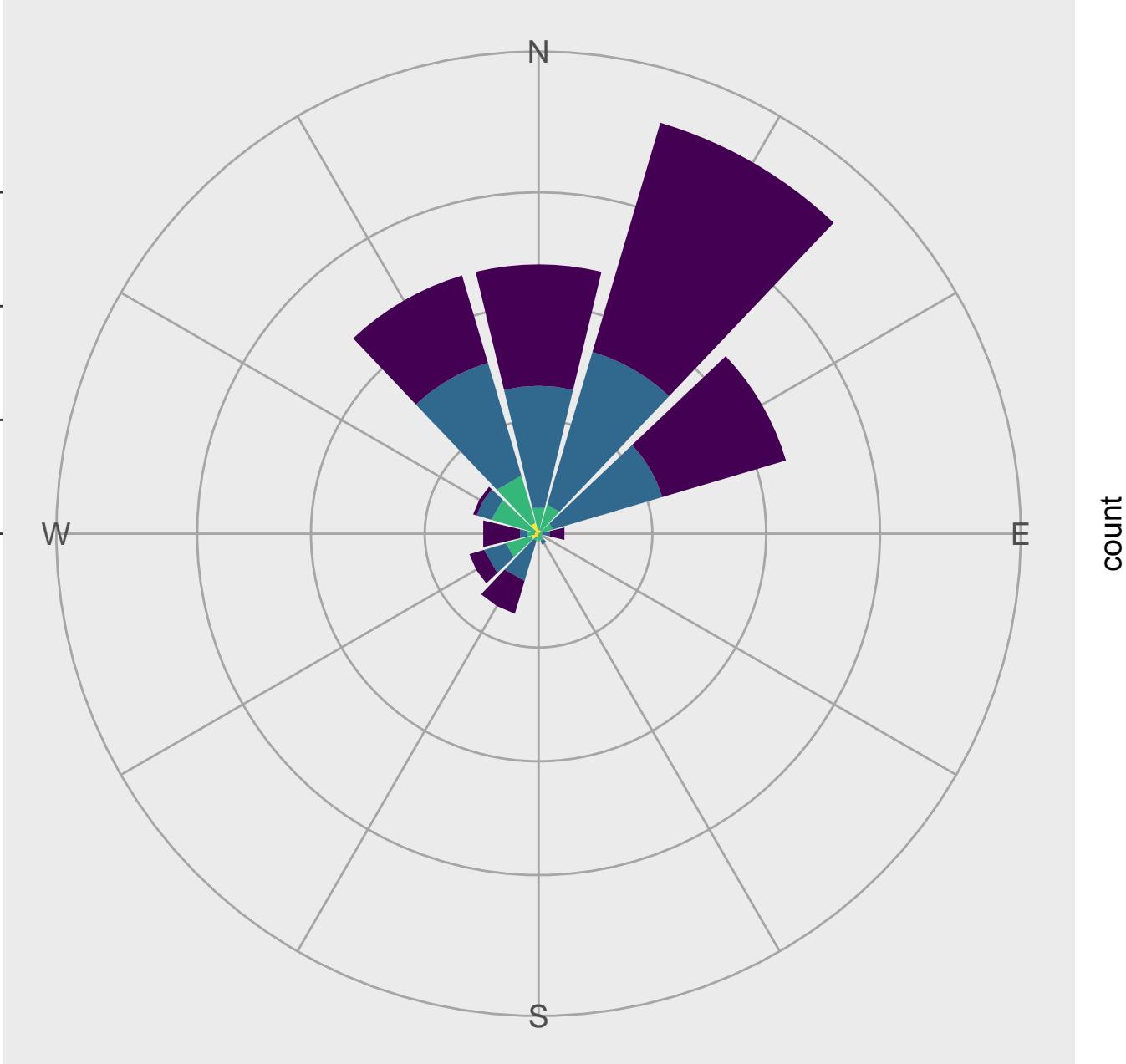
Distance to Source (km)    750–1000    500–750    250–500    0–250

Distance to Source (km)    750–1000    500–750    250–500    0–250

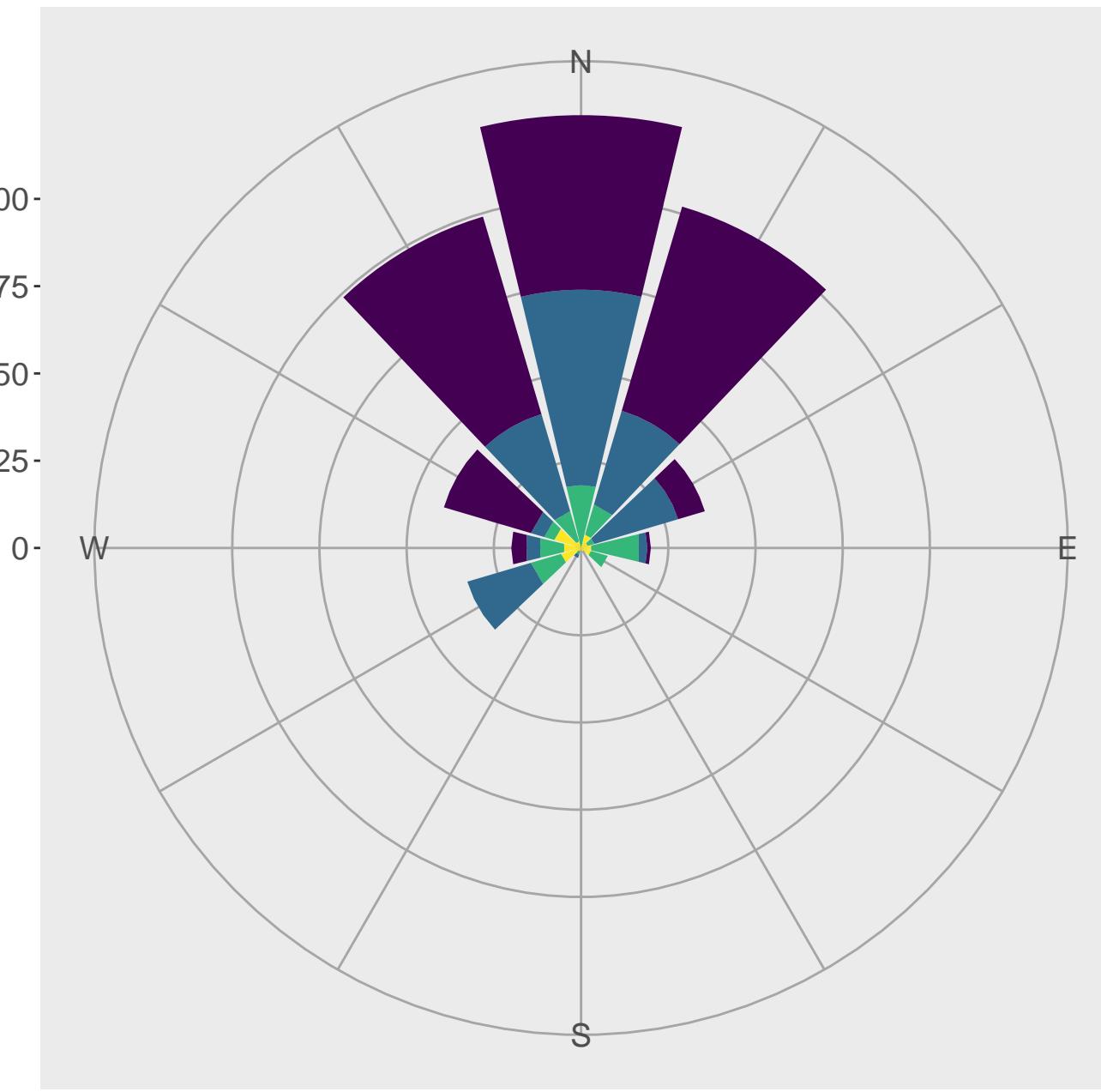
**Edge counts by distance/direction to source**  
Tennessee receptors



**Edge counts by distance/direction to source**  
Arkansas receptors



**Edge counts by distance/direction to source**  
Georgia receptors

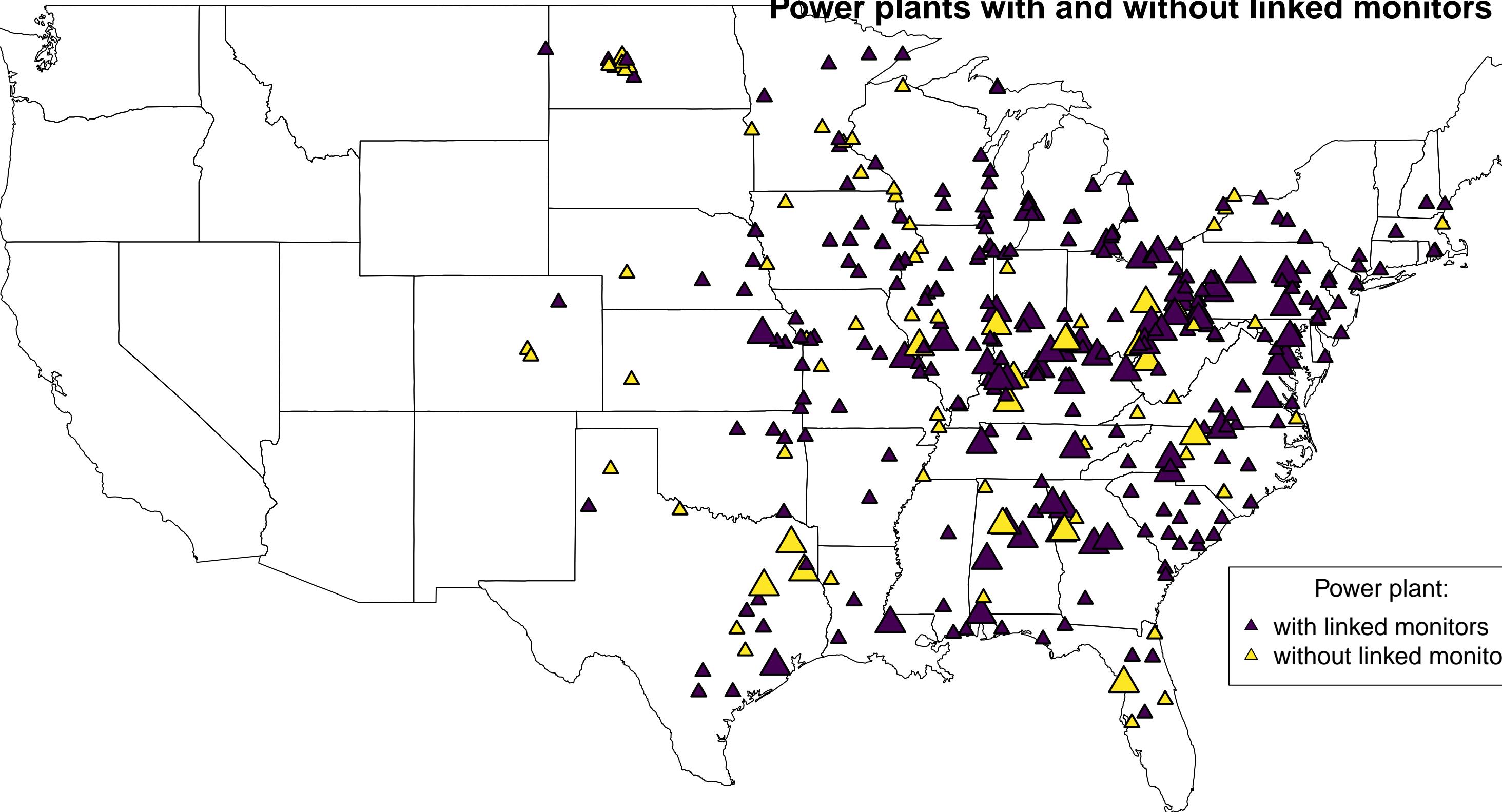


Distance to Source (km)    750-1000    500-750    250-500    0-250

Distance to Source (km)    750-1000    500-750    250-500    0-250

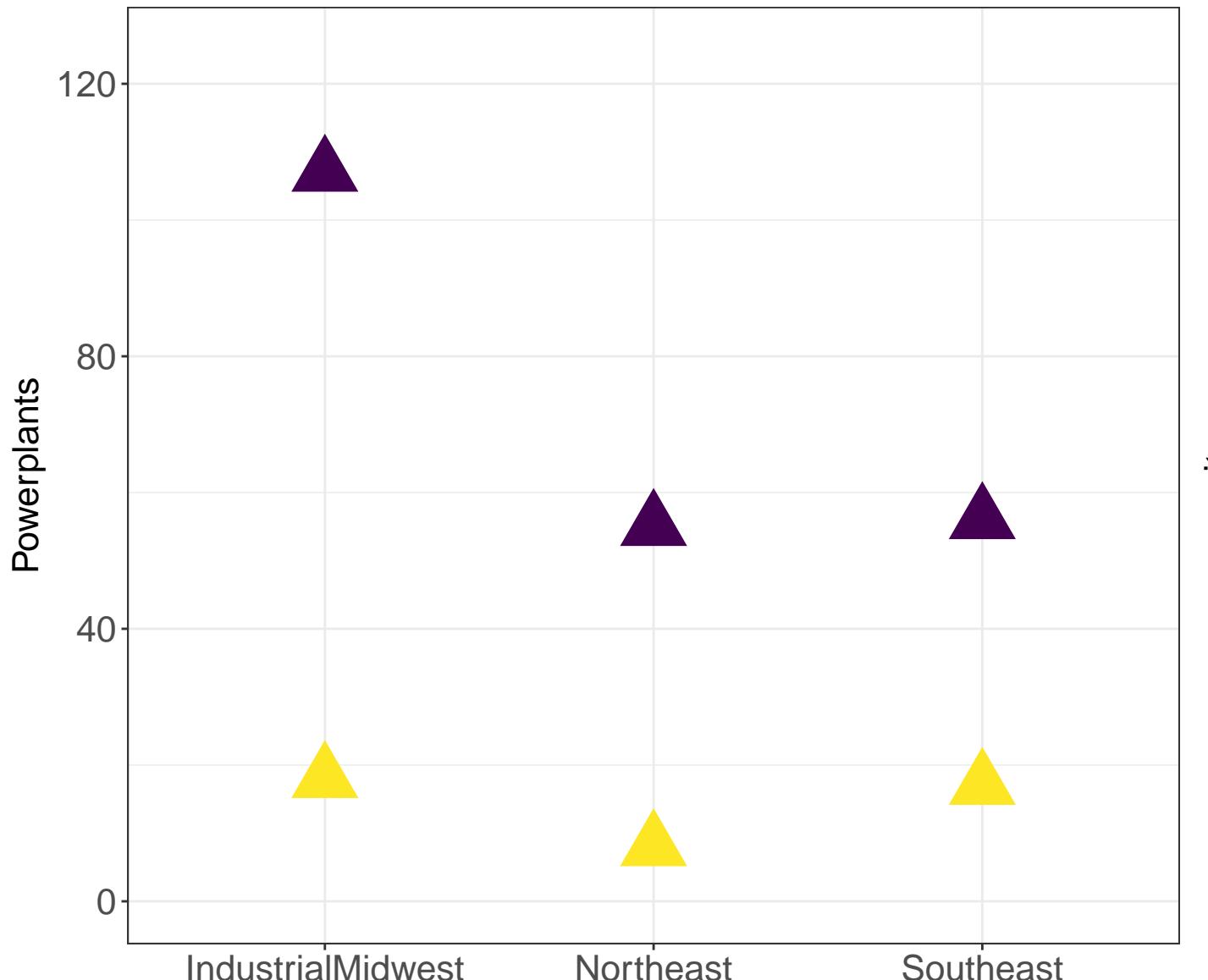
Distance to Source (km)    750-1000    500-750    250-500    0-250

## Power plants with and without linked monitors

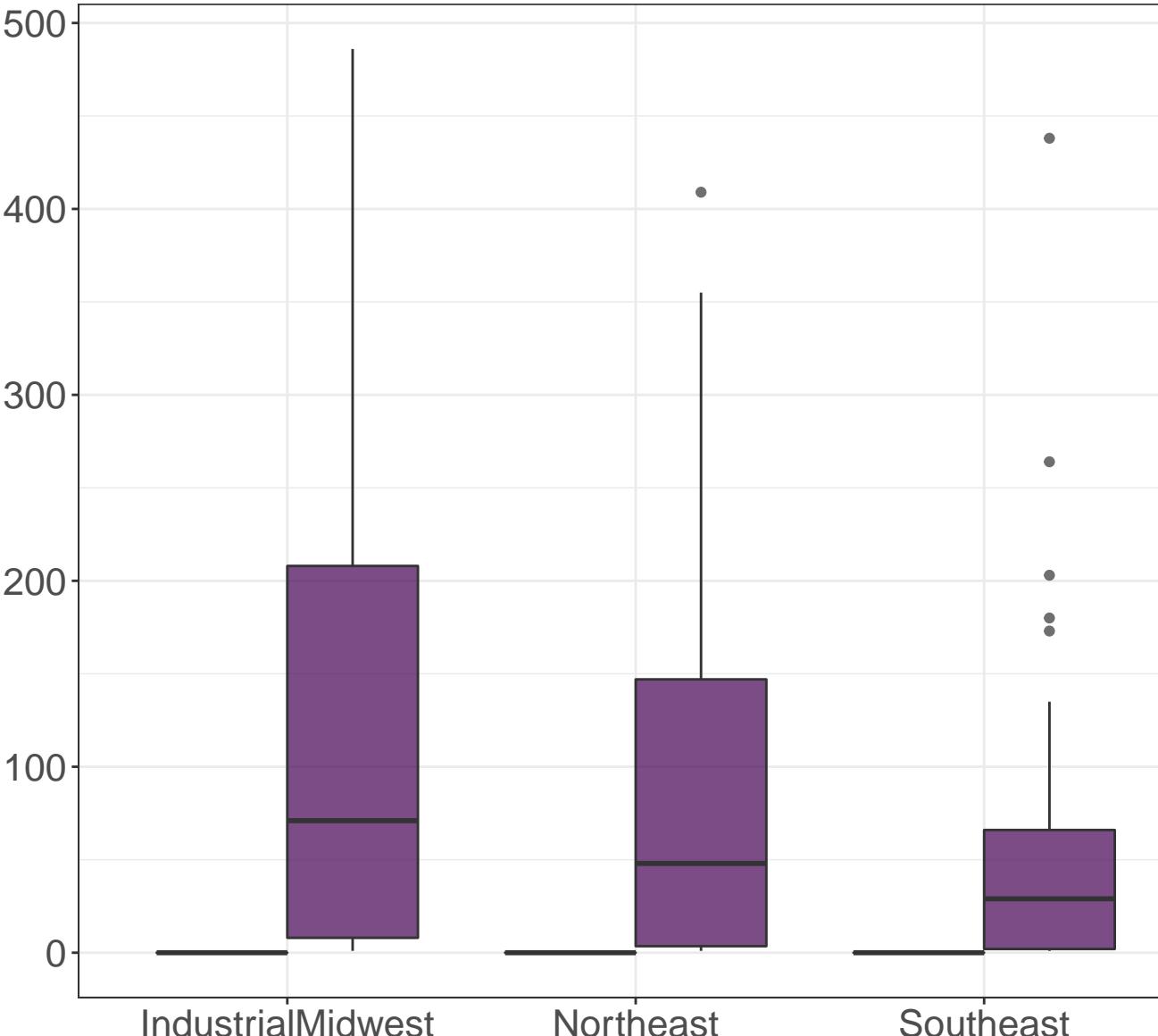


# Why do some power plants have linked monitors and others do not?

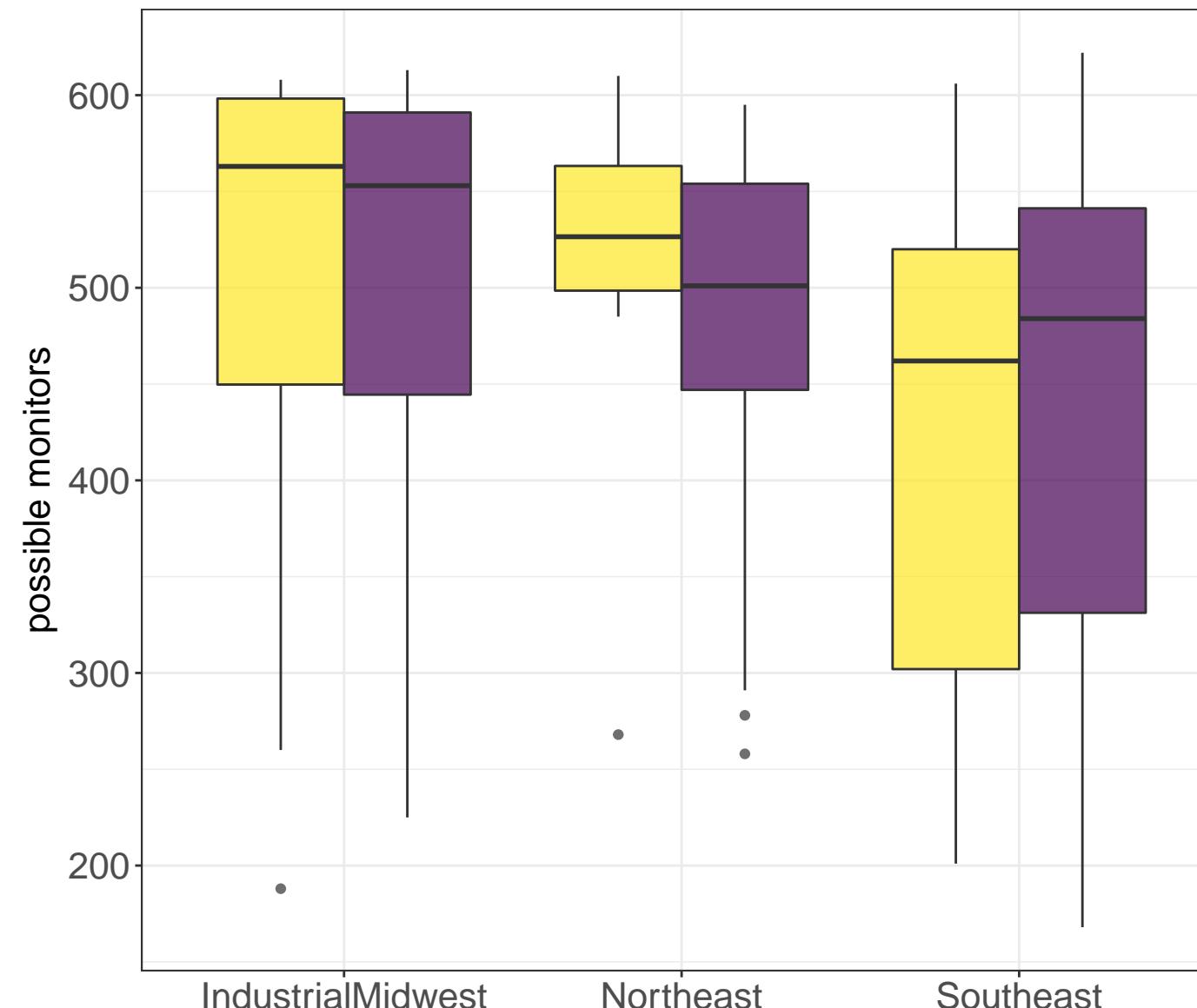
Number of powerplants



Number of linked monitors



Number of possible linked monitors

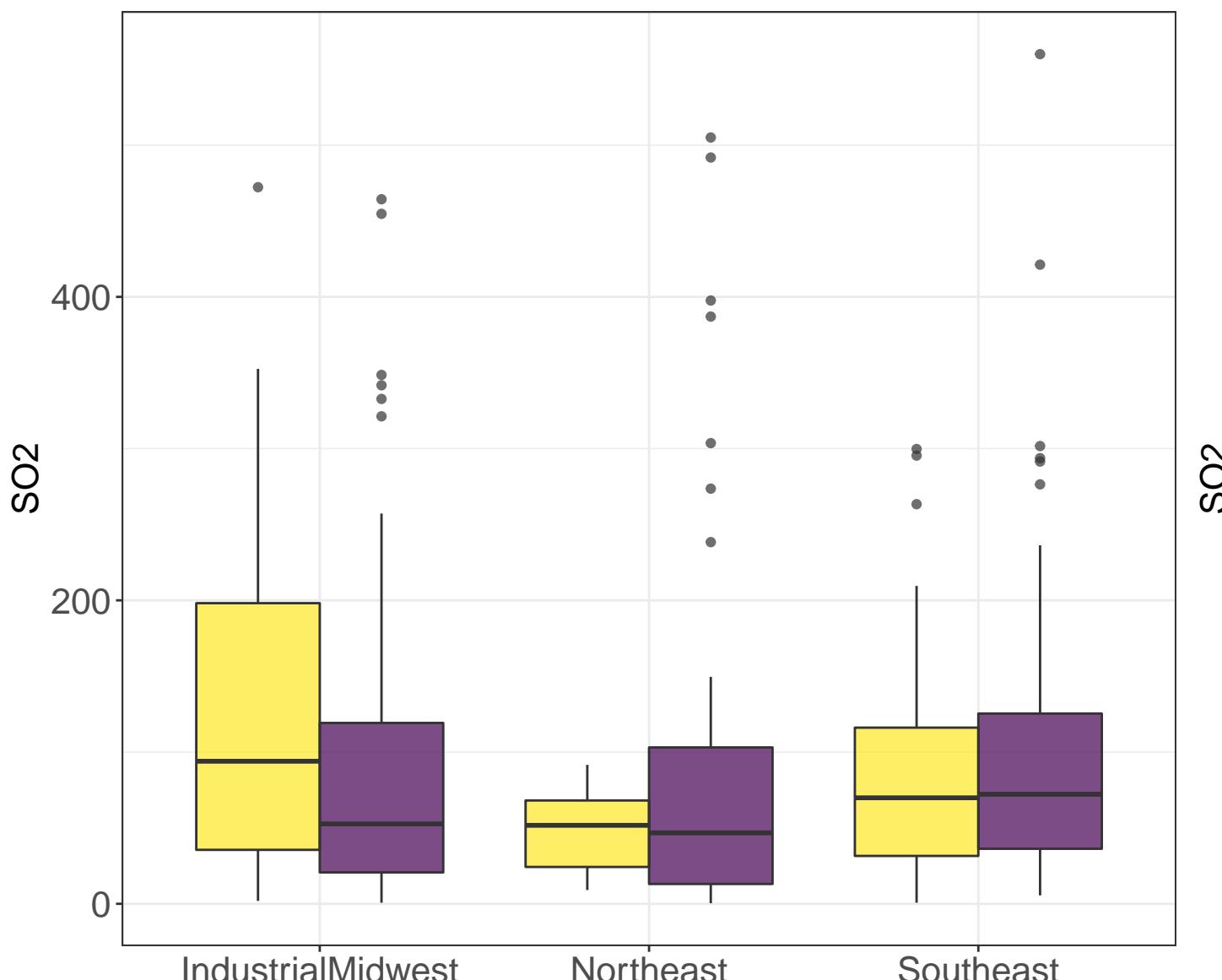


Powerplants: without edges

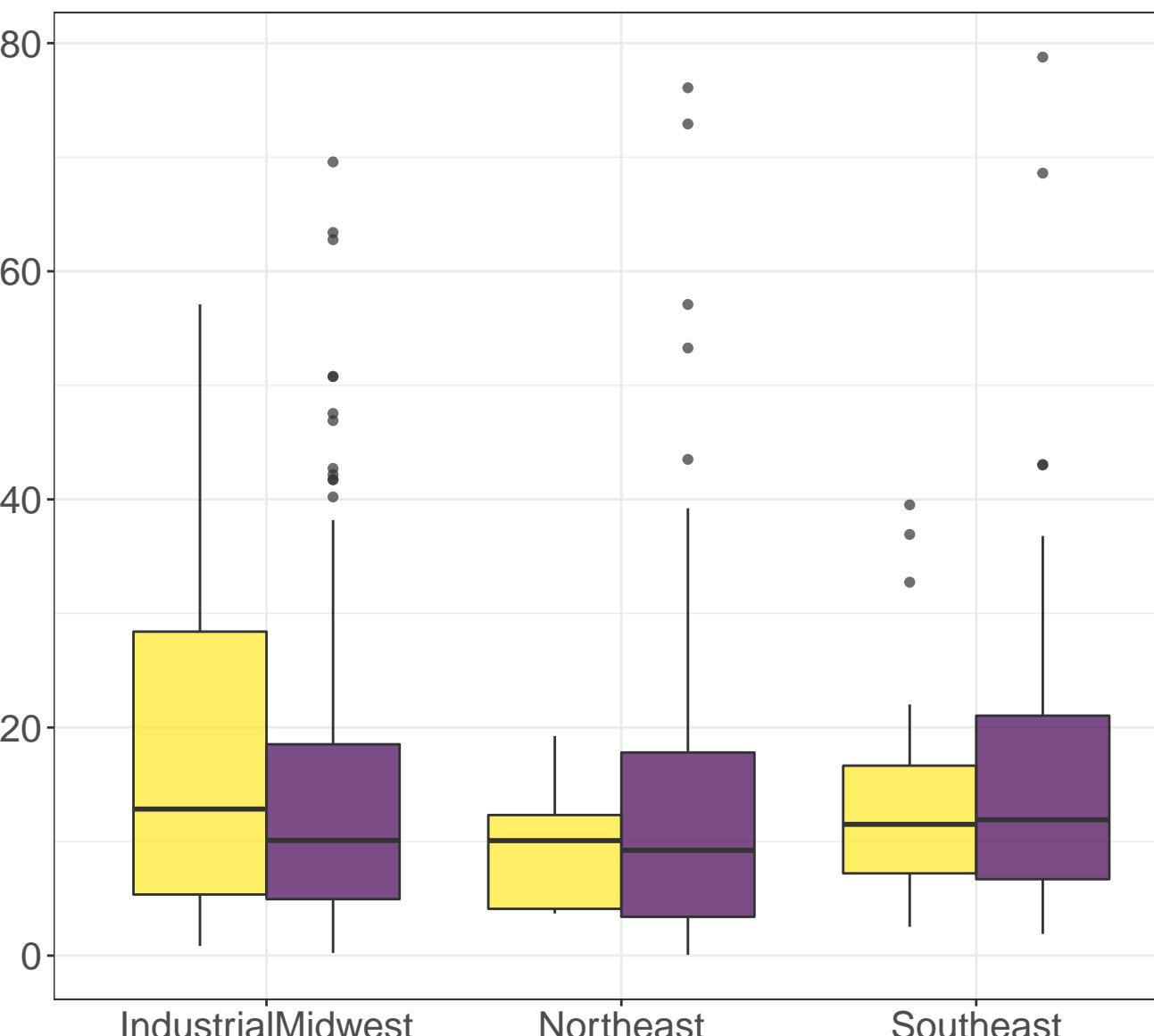


# Why do some power plants have linked monitors and others do not?

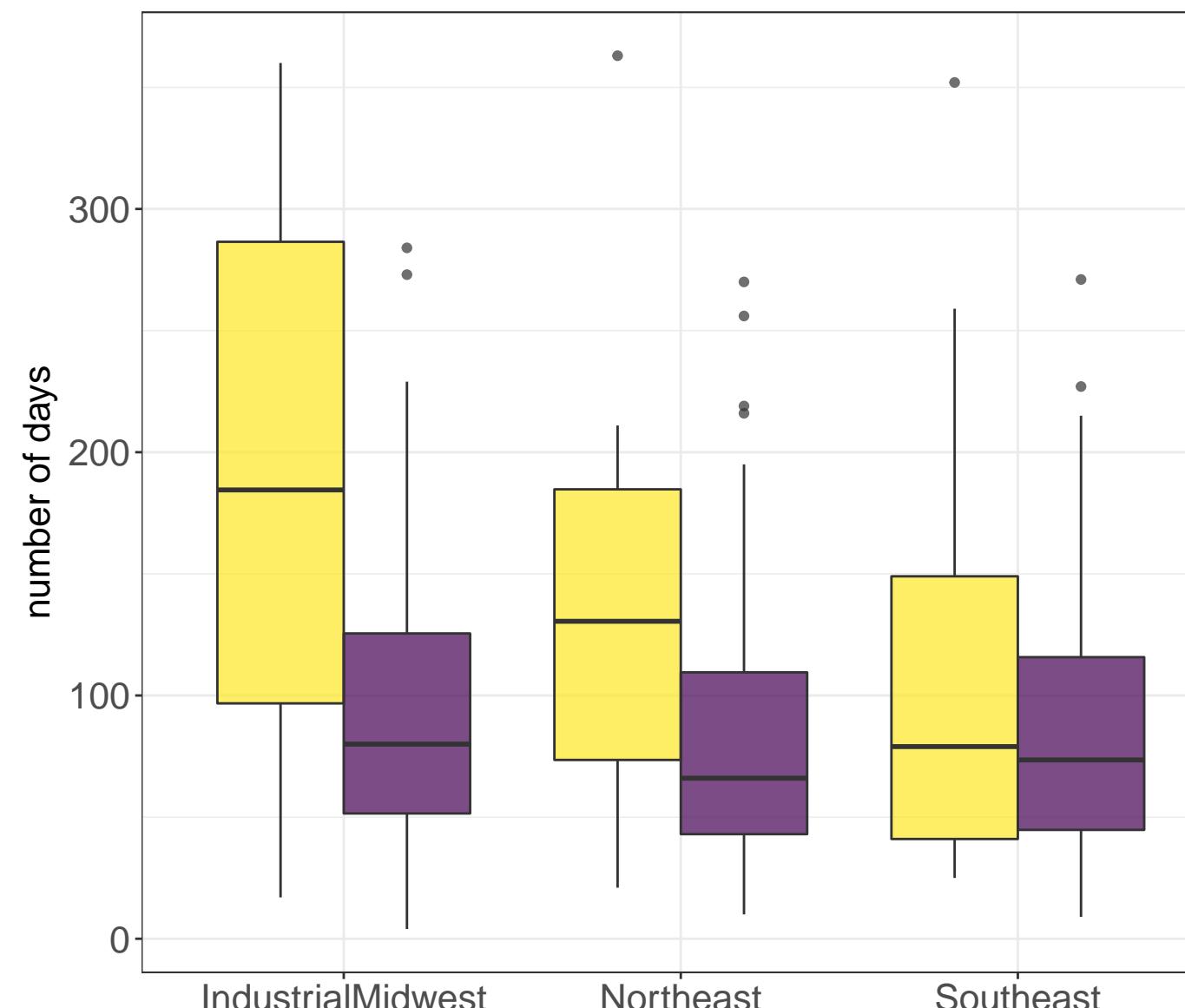
Average daily emissions



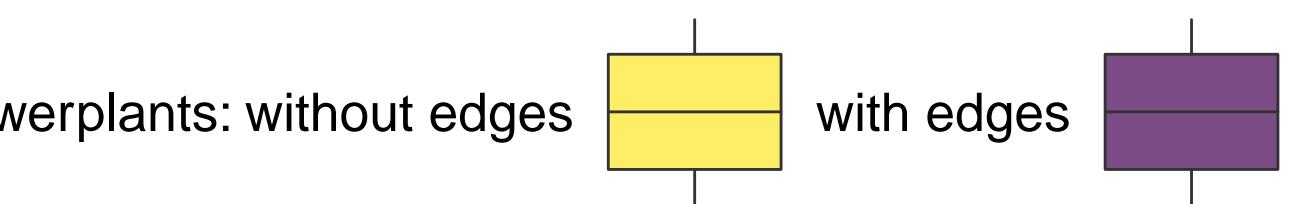
Standard deviation in daily emissions



Number of days with missing emissions data

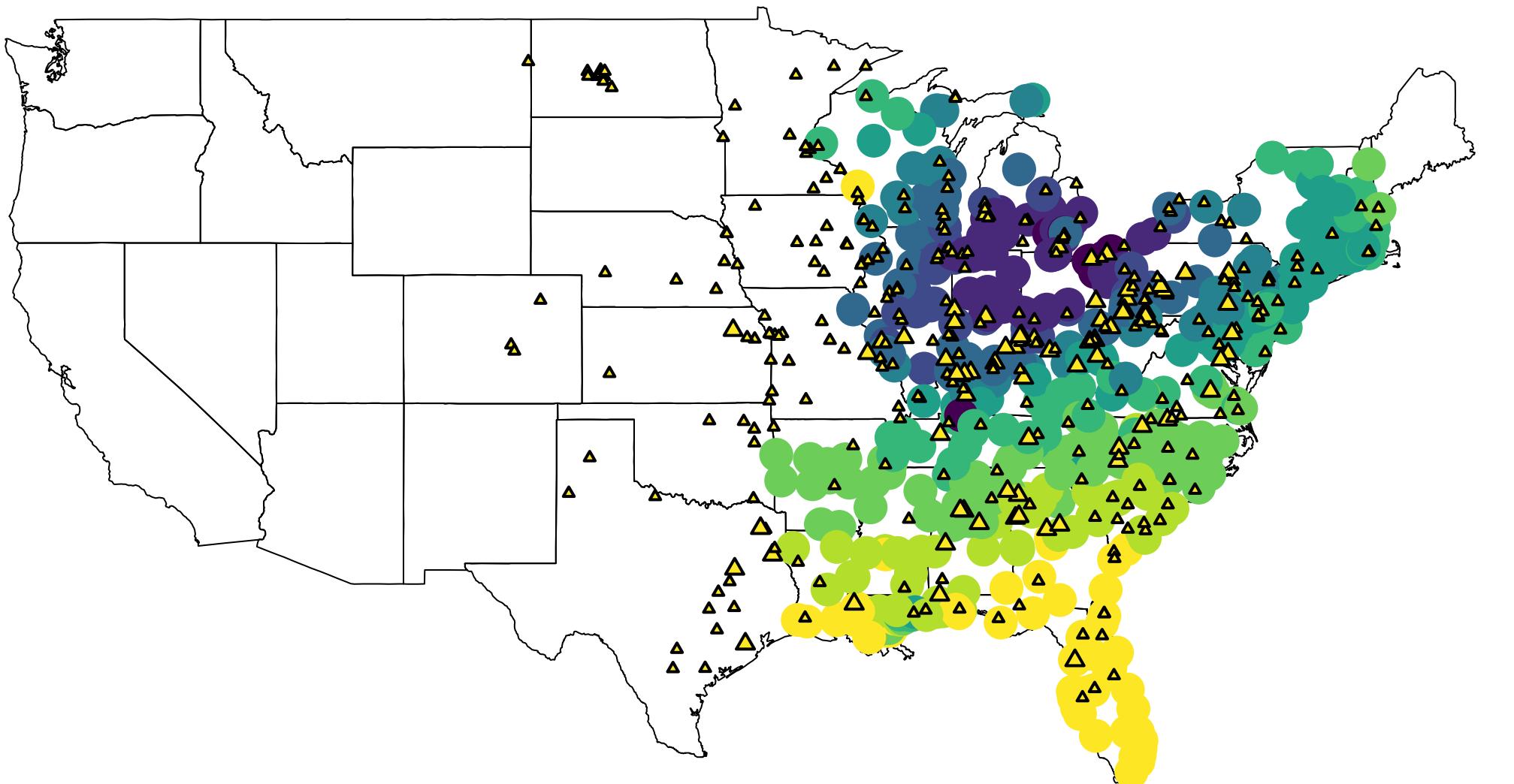


Powerplants: without edges

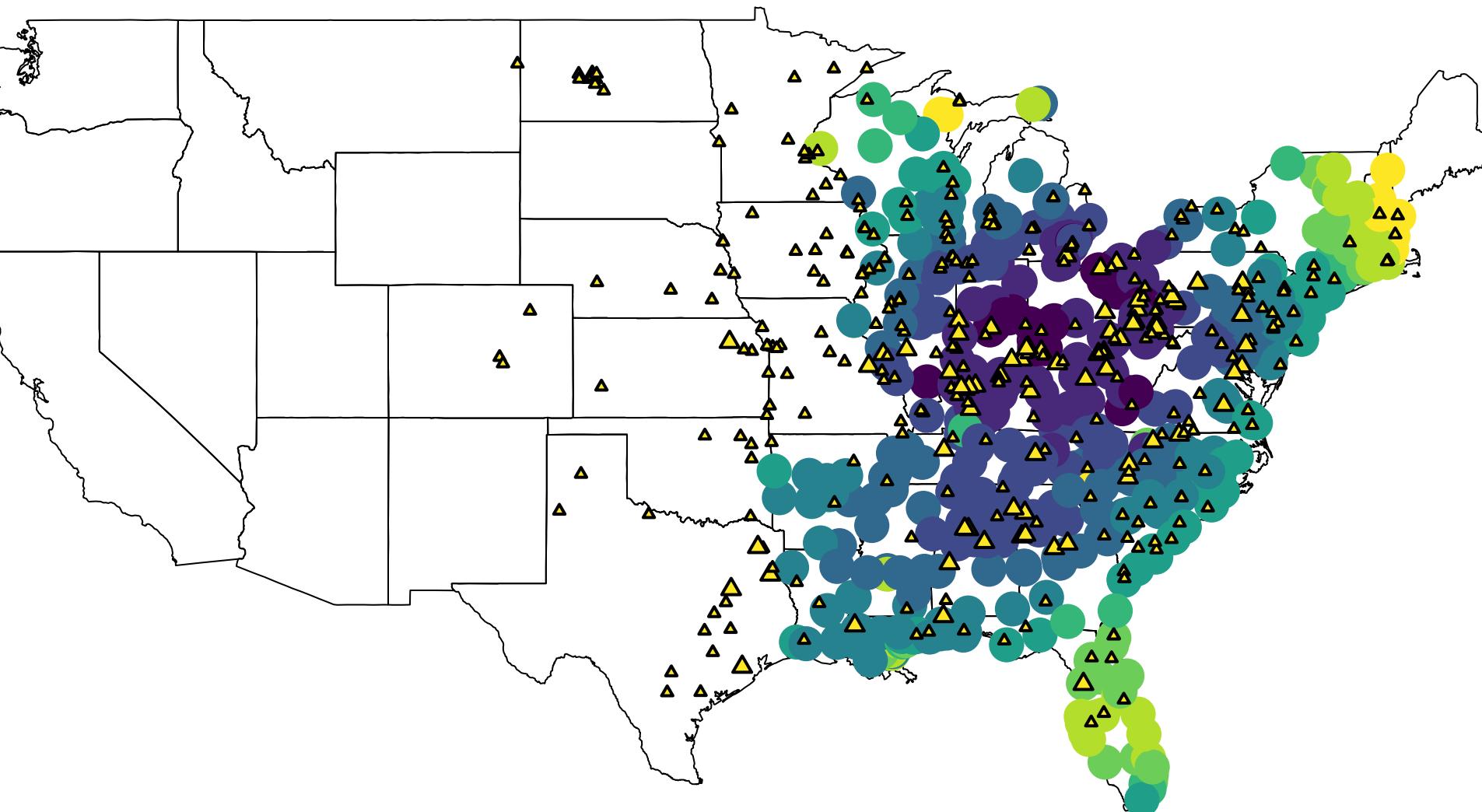


with edges

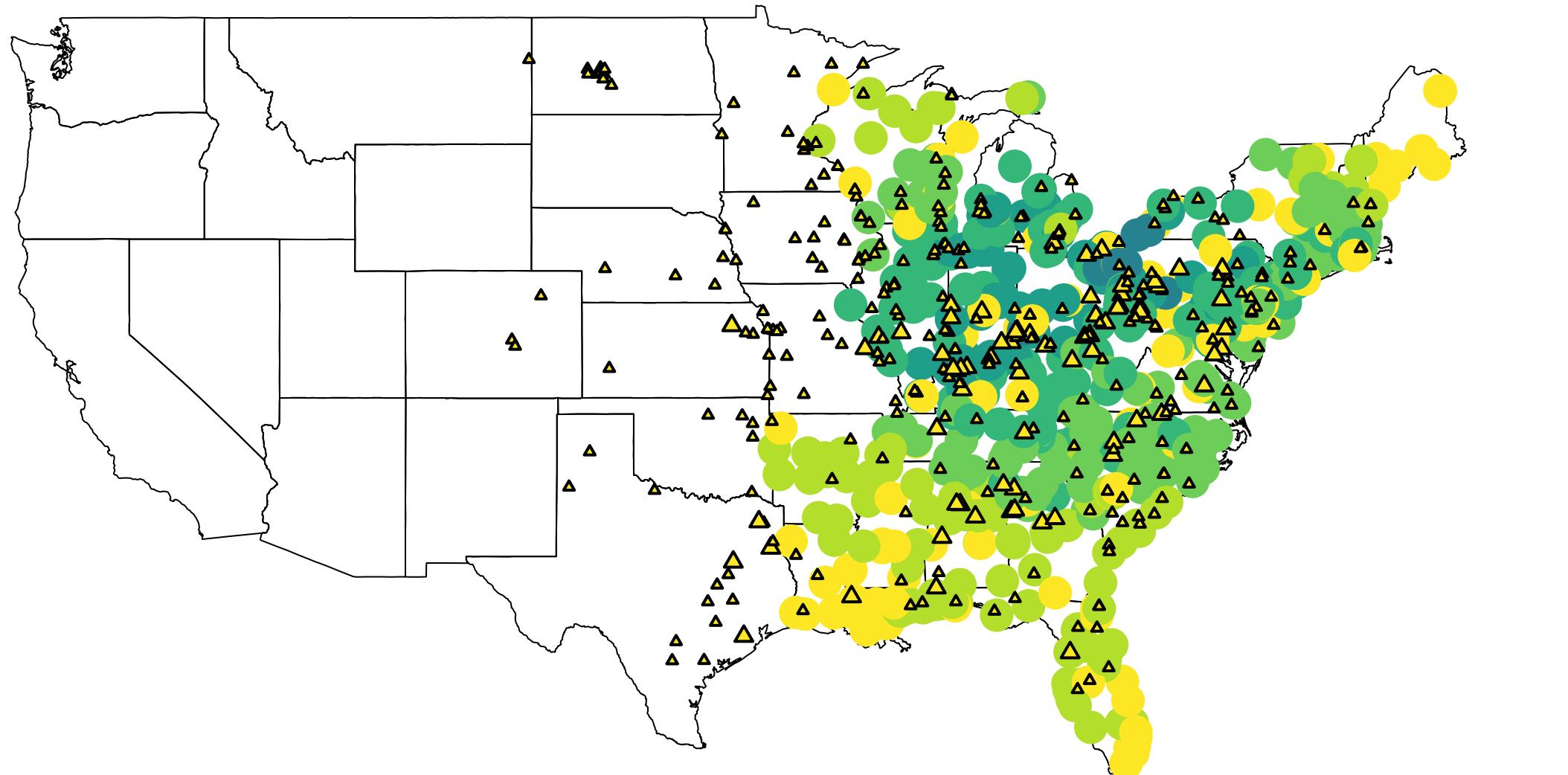
**Monitor exposure: sum of gams.coeff, year\_distLag 2005**



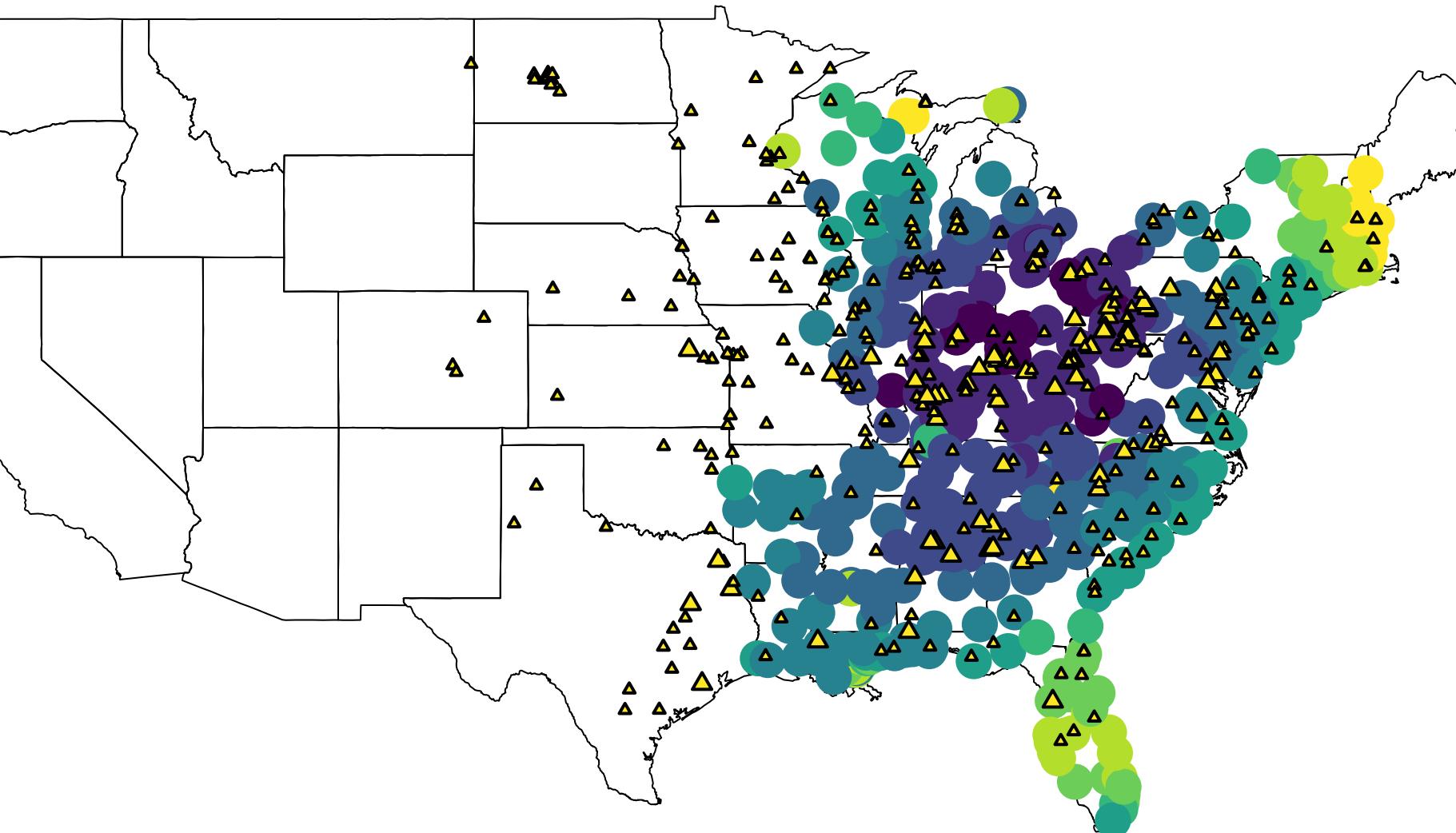
**Monitor exposure: avgPM, decomposed75 year\_distLag 2005**



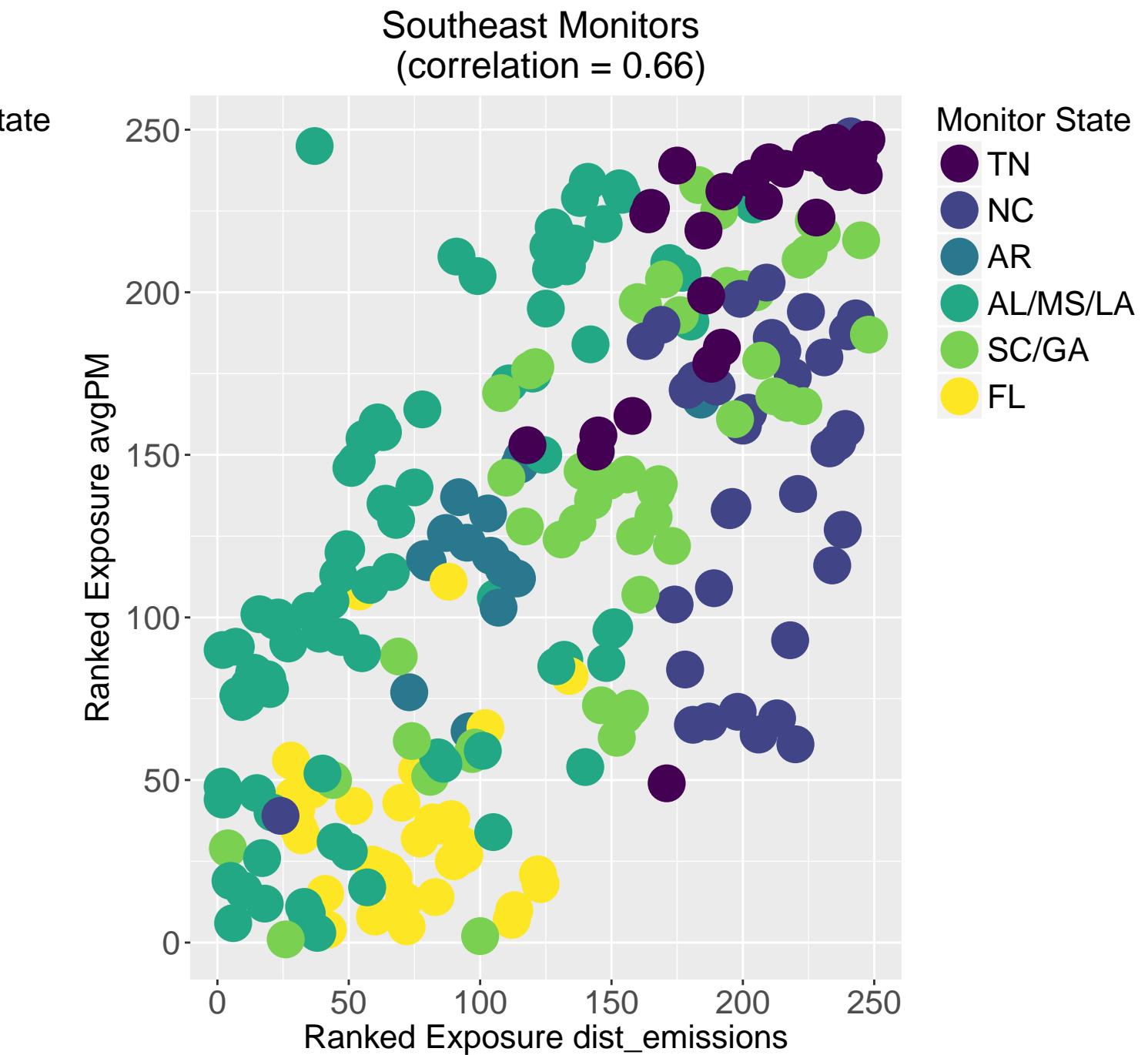
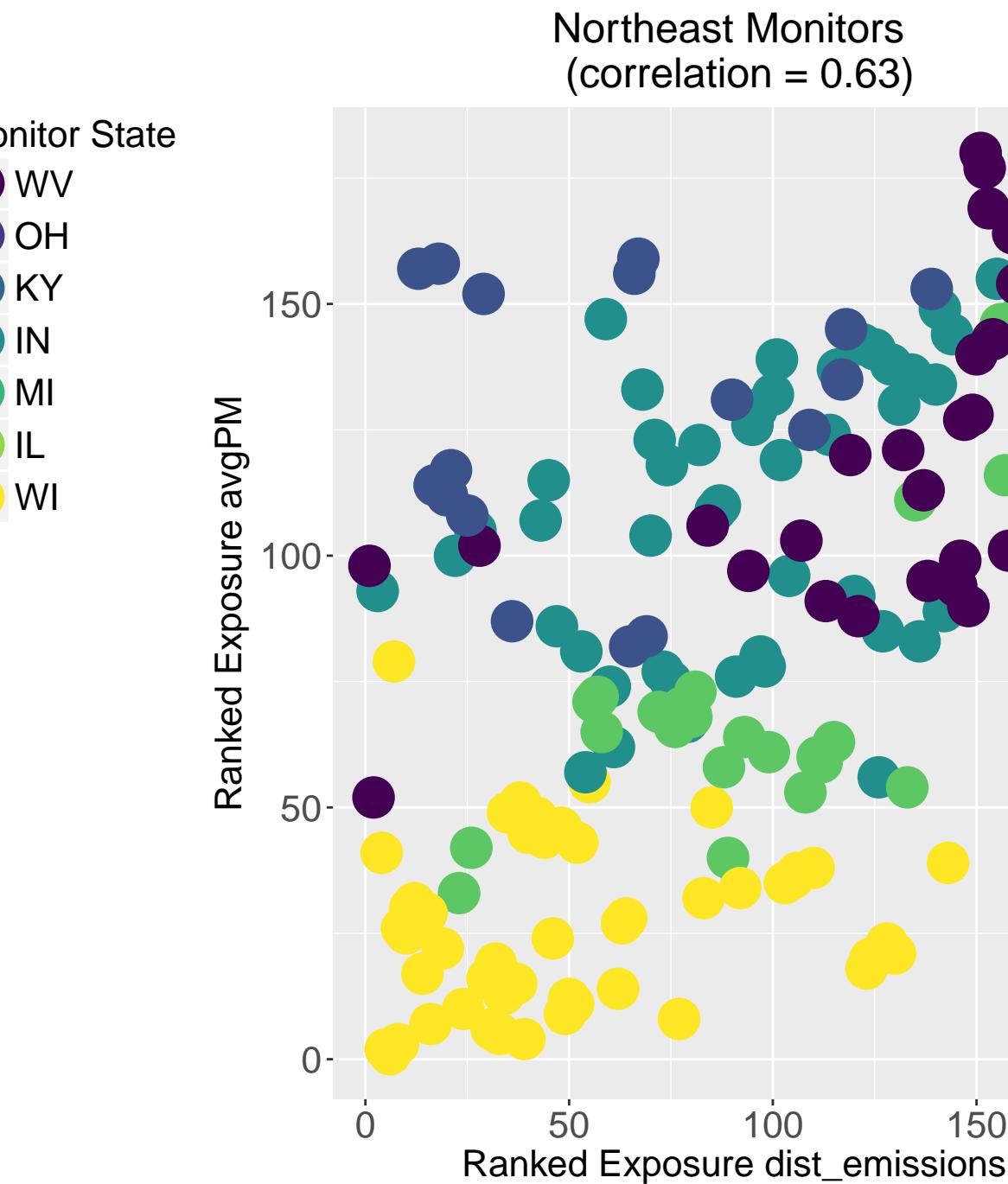
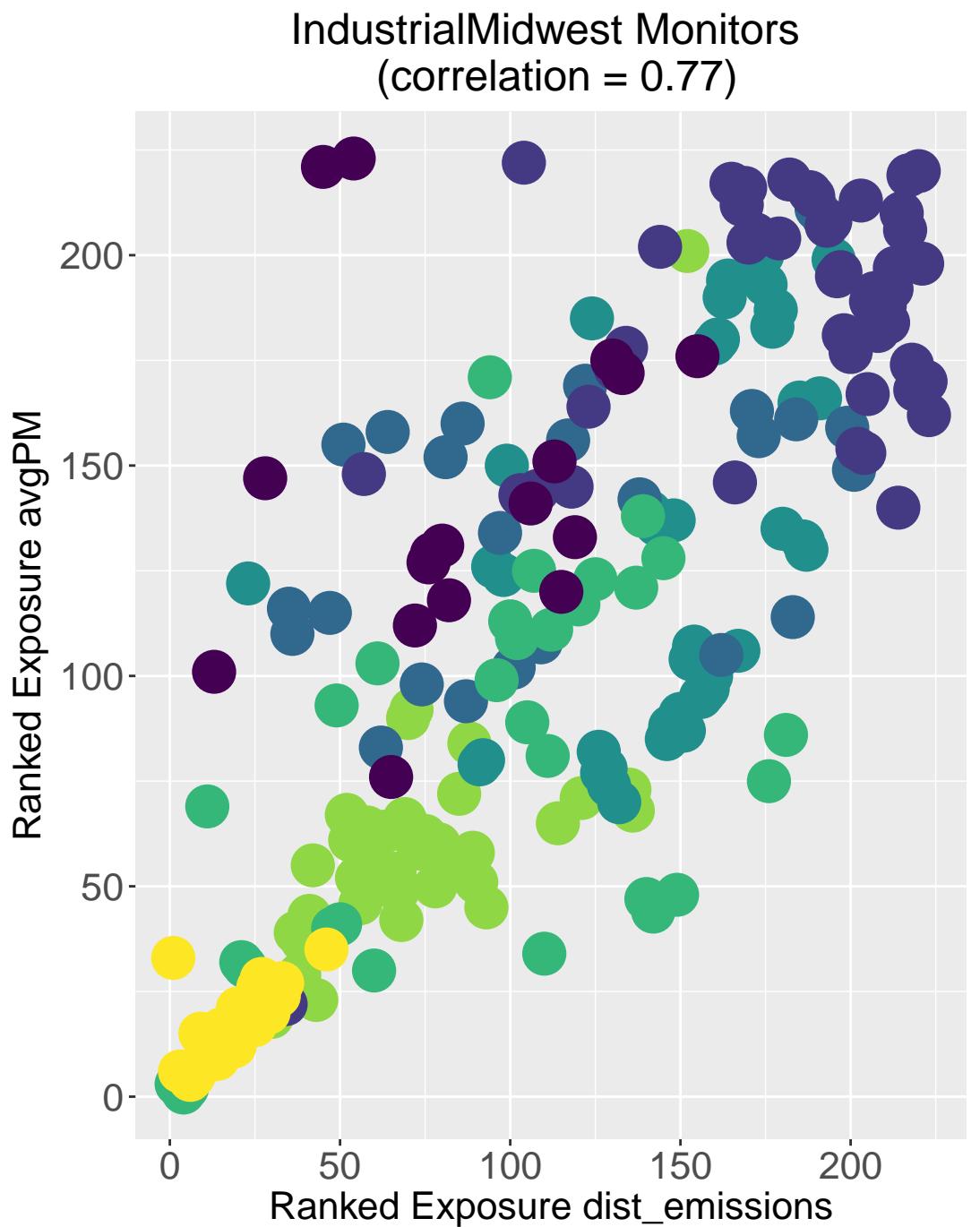
Monitor exposure:  
sum of avgemissions\*(1/log(distance)), year\_distLag 2005



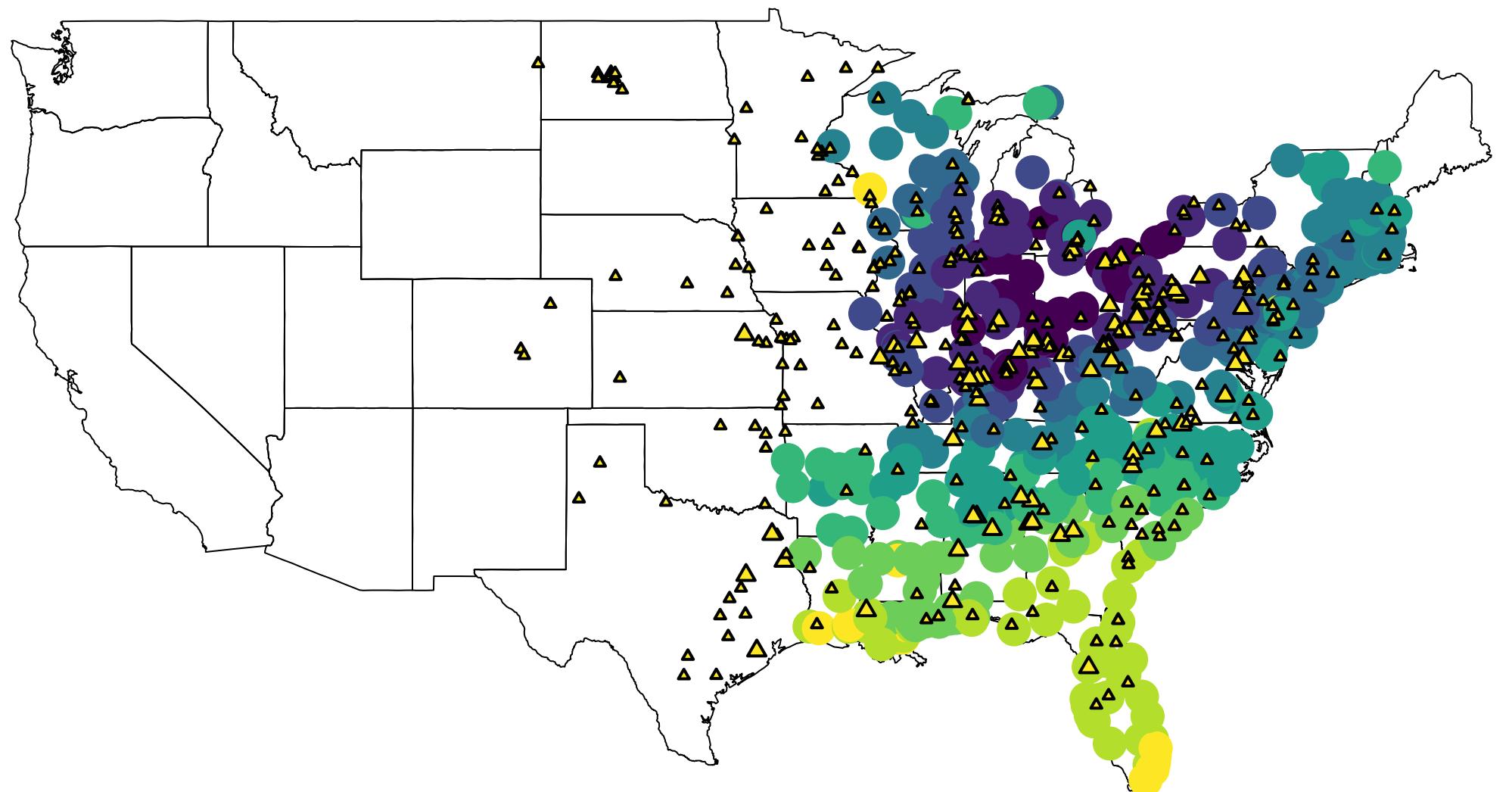
Monitor exposure:  
avgPM, decomposed75 year\_distLag 2005



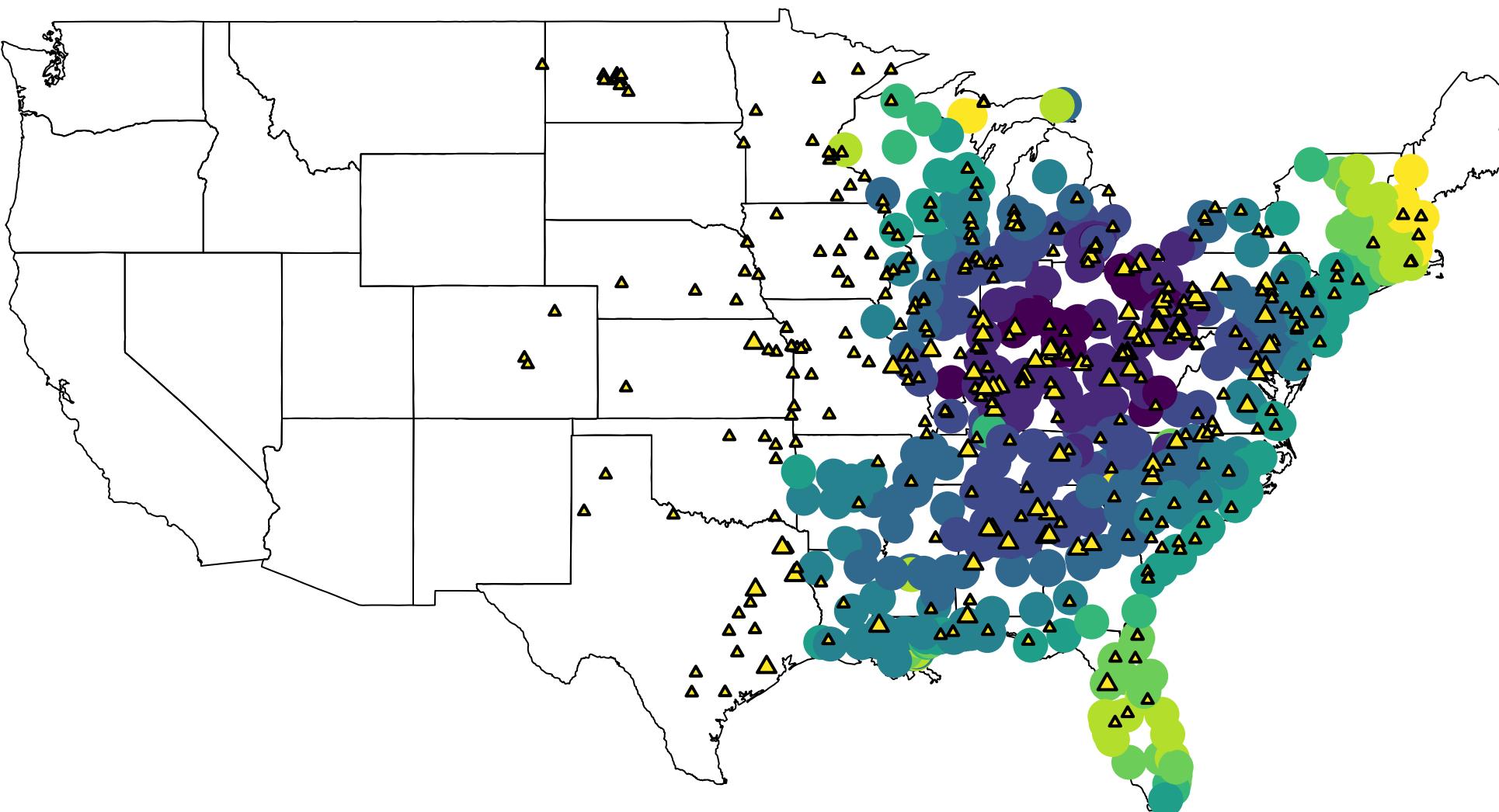
# Comparison of coal emissions exposure (sum of $(1/\log(\text{distance})) * \text{avgemissions}$ vs. low freq PM)



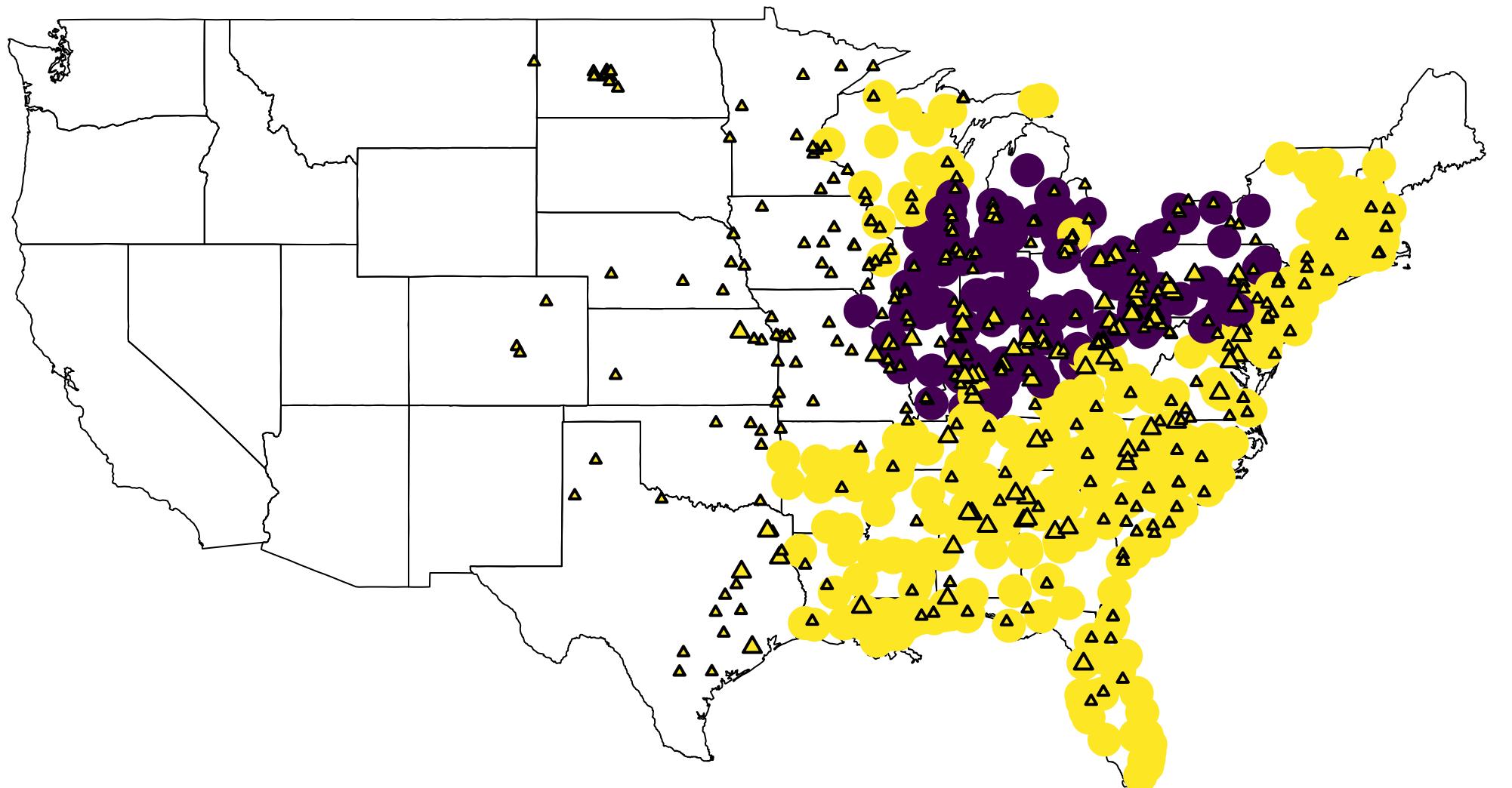
**Monitor exposure: num\_edges, year\_distLag 2005**



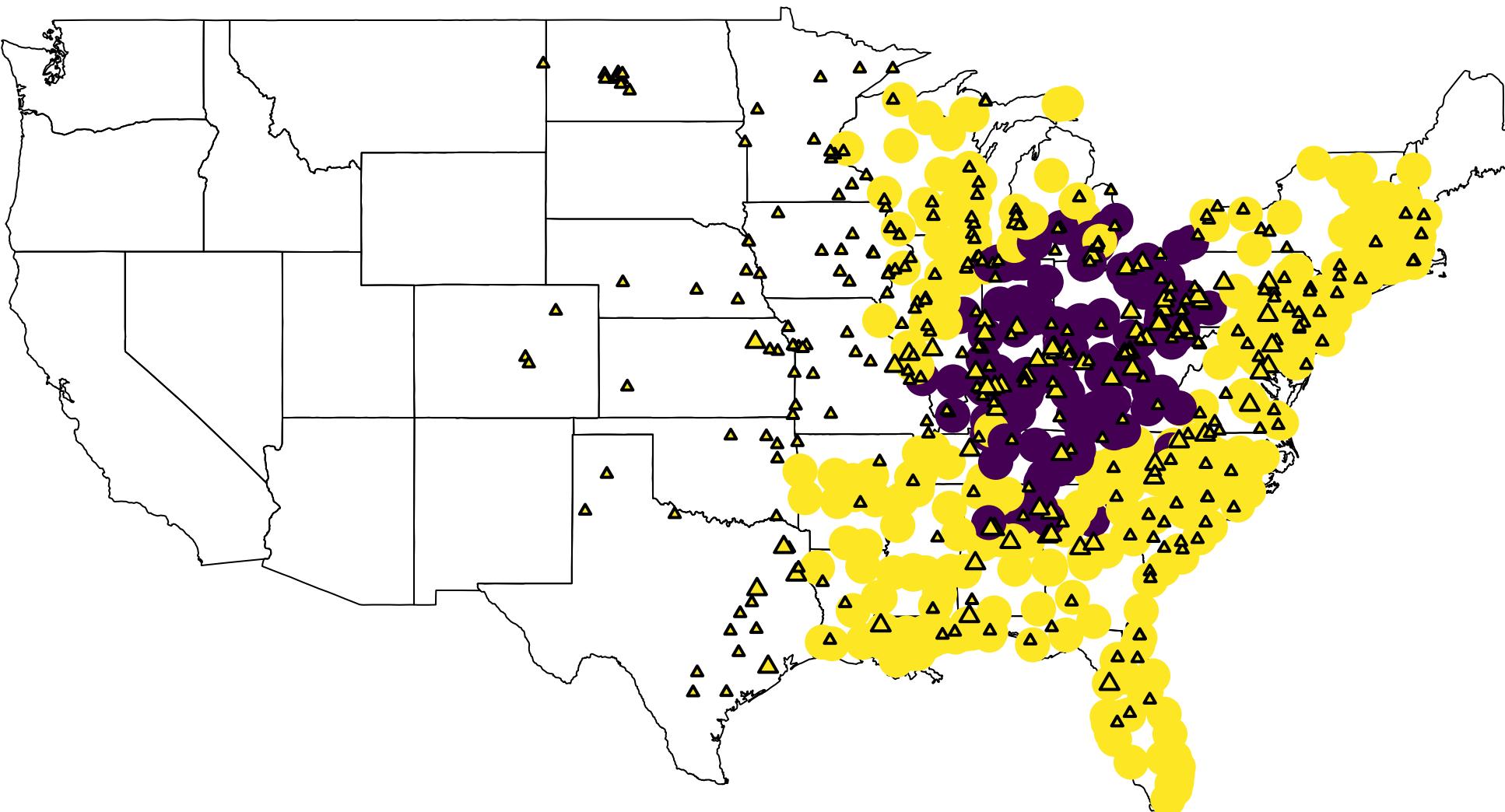
**Monitor exposure: avgPM, decomposed75 year\_distLag 2005**



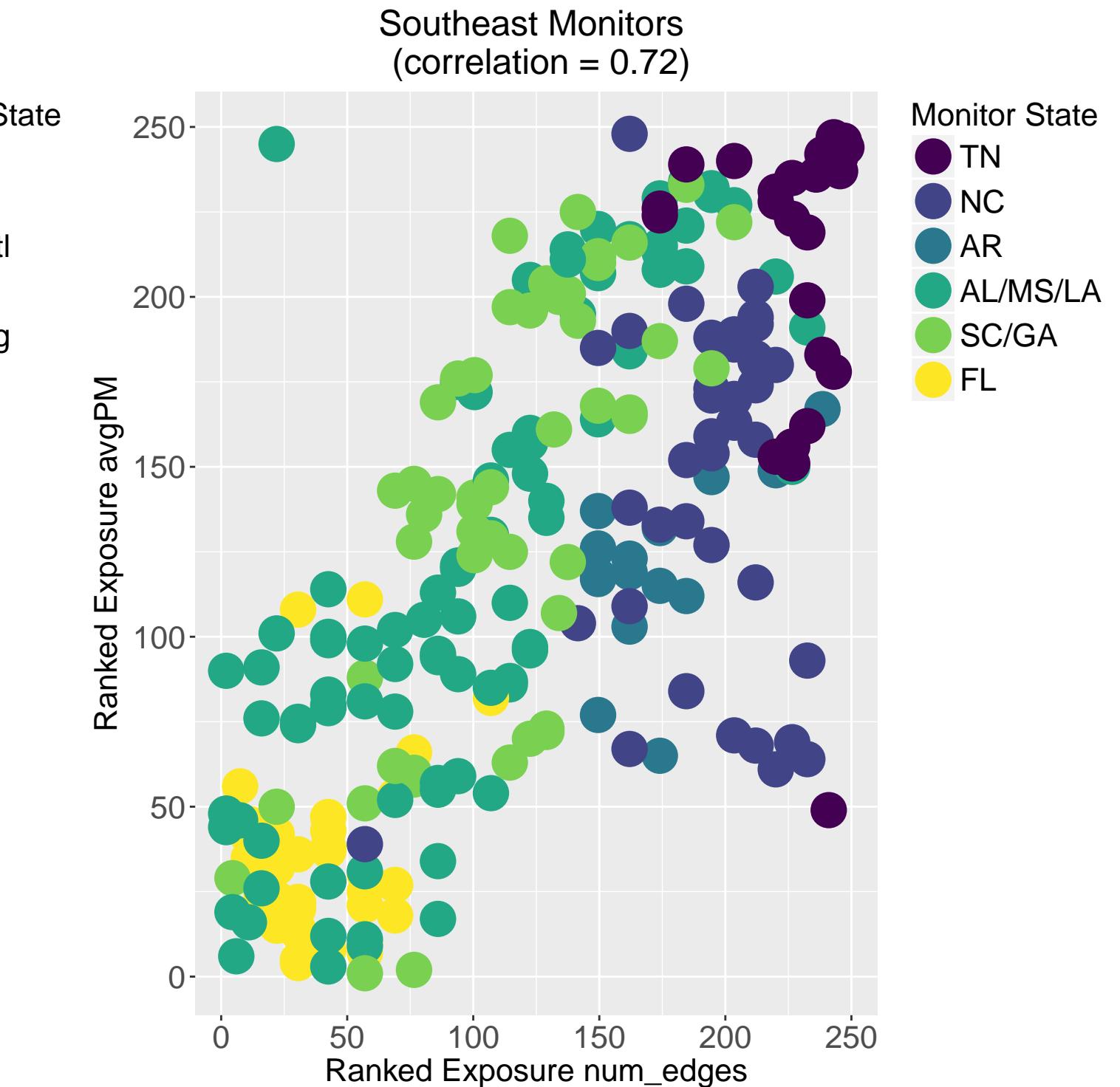
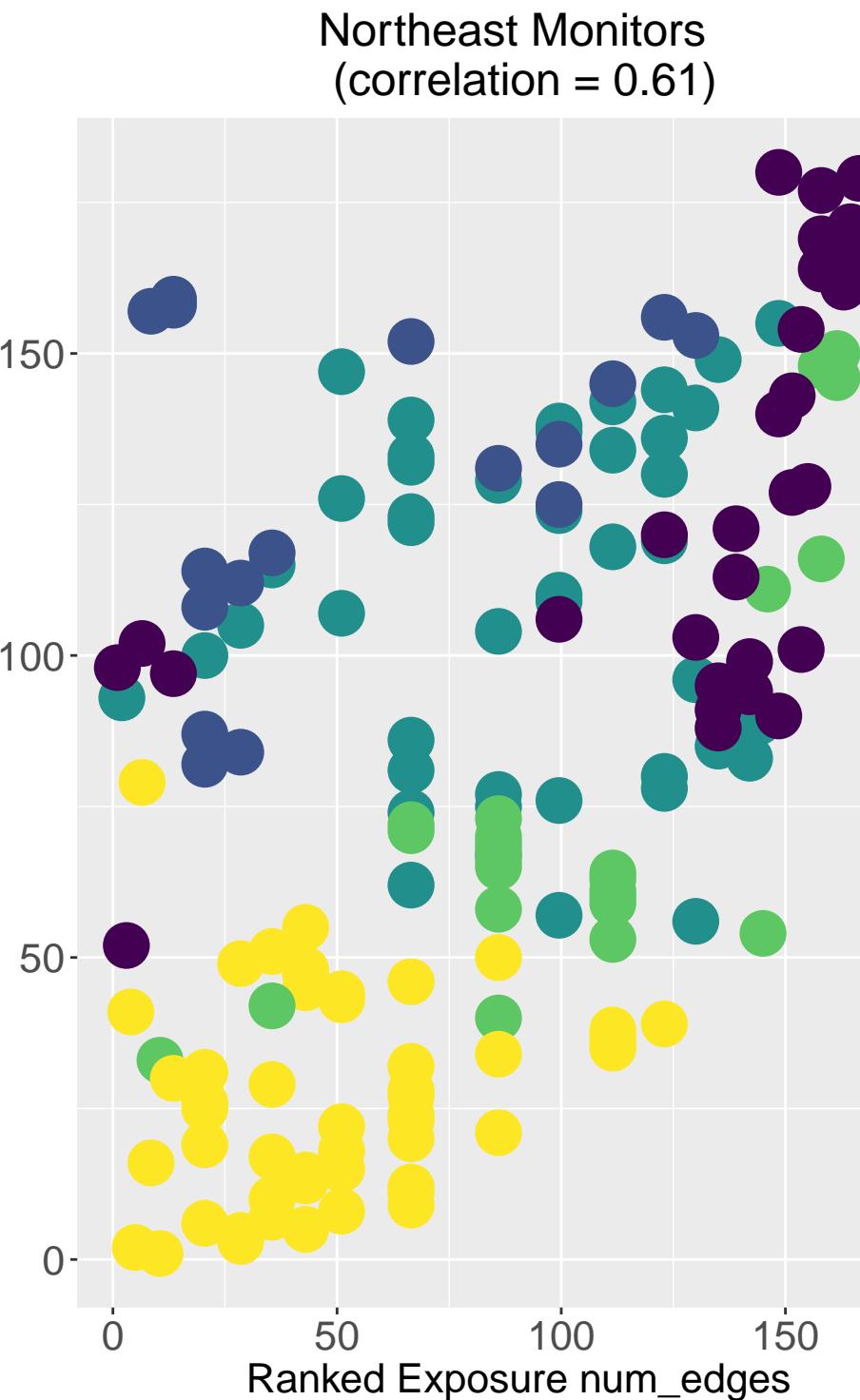
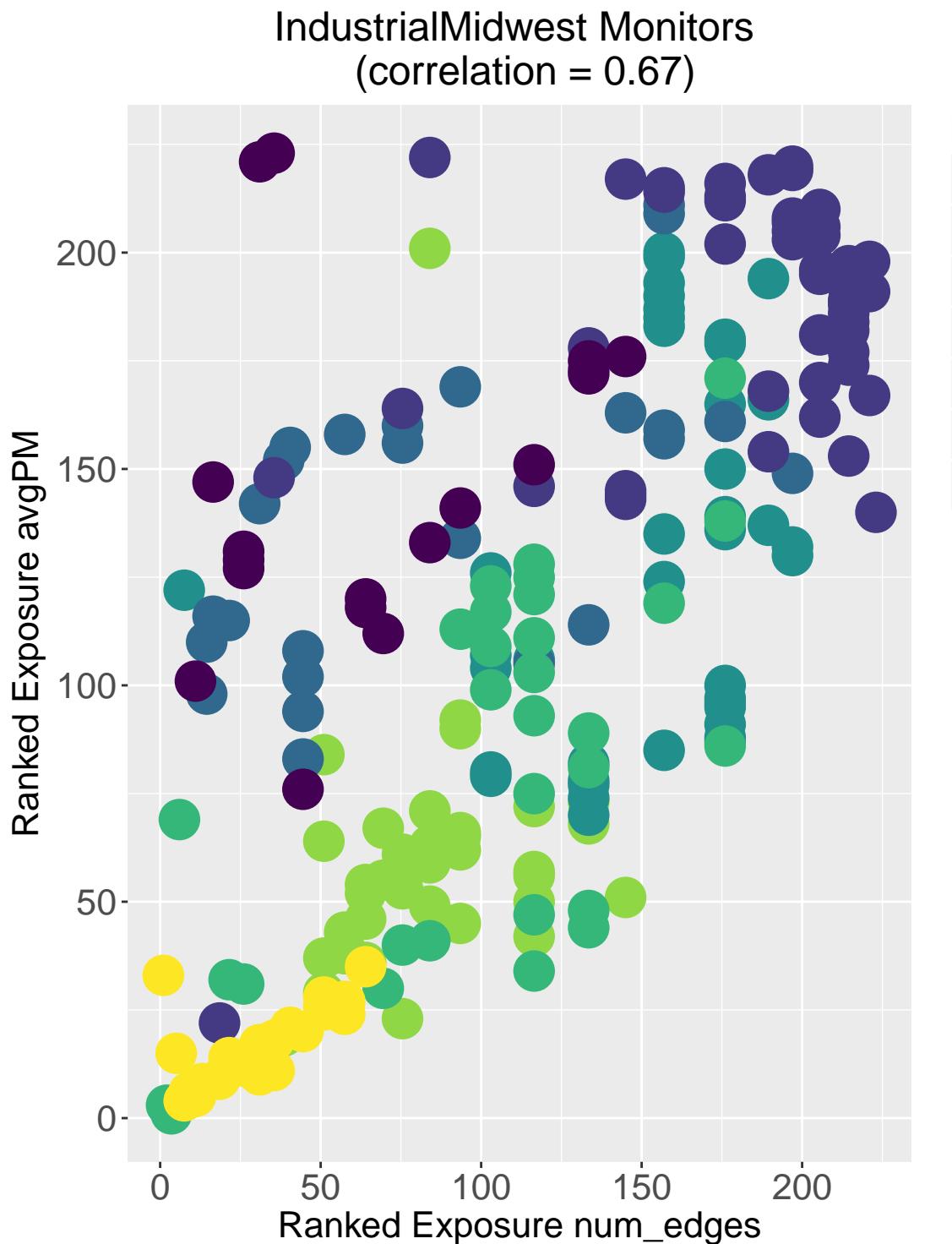
**Highest exposed: num\_edges, year\_distLag 2005**



**Highest exposed: avgPM, decomposed75 year\_distLag 2005**



# Comparison of coal emissions exposure (num\_edges vs. low freq PM)



# Comparison of coal emissions exposure (avgemissions vs. low freq PM)

