Mixture Modeling Paper Results

Sarah Sullivan

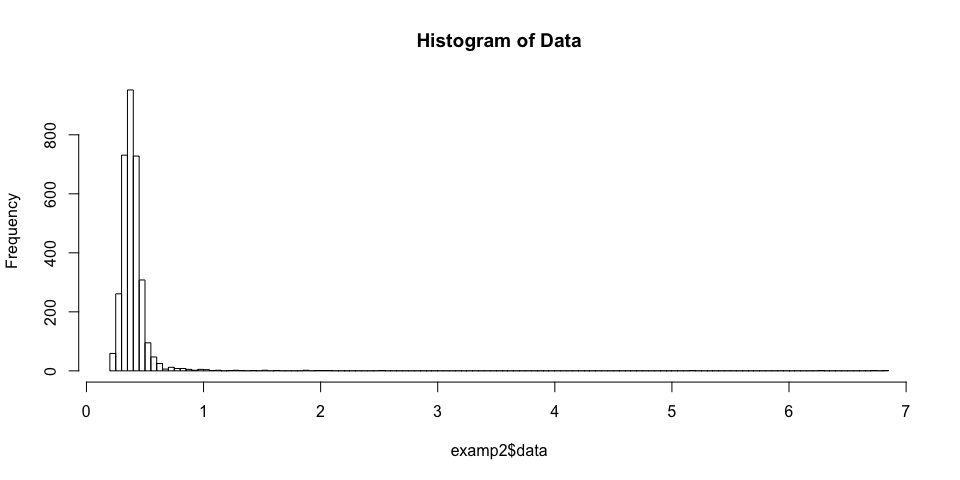
March 8, 2017

# Example 1

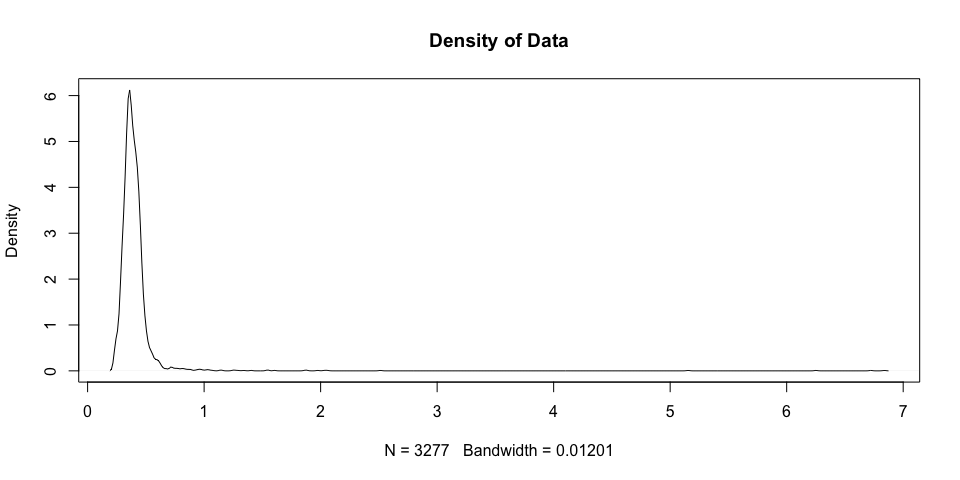
#examp1<-read.csv(file="/Users/sarahsullivan/Documents/SullivanDocs/Rwd/cutoff/ex1.csv", colClasses=c("NULL", NA, NA))  
  
#hist(examp1$data, breaks=100, main="Histogram of Data")  
#dens1<-density(examp1$data)  
#plot(dens1, main="Density of Data")  
  
#fitloopsobject<-fitloops(datawithids=examp2)  
 #might not run due to 5 component solution not being easily optimized, if it doesn't run either load the full file, or run fitloopsobject<-fitloops(datawithids=examp2,maxcp=4):   
#load(file="/Users/sarahsullivan/Documents/SullivanDocs/Rwd/cutoff/ex1fitloops")  
  
#bicgraph(model=fitloopsobject1)  
  
#modelpickobject2<-modelpick(fitloopsobject1)  
  
#rawuncertgraph(modelpickobject1)  
#rawdistgraph(modelpickobject1)  
#rawhistcuts(modelpickobject1)

# Example 2

examp2<-read.csv(file="/Users/sarahsullivan/Documents/SullivanDocs/Rwd/cutoff/ex2.csv")  
  
hist(examp2$data, breaks=100, main="Histogram of Data")



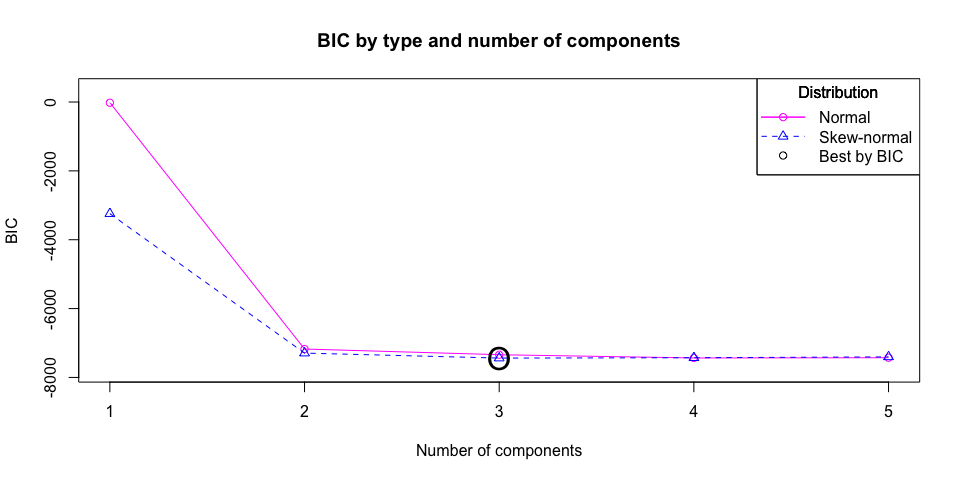
dens2<-density(examp2$data)  
plot(dens2, main="Density of Data")



fitloopsobject2<-fitloops(datawithids = examp2)

## [1] ""  
## [1] "The best model by BIC is Skew-normal with 3 components"  
## [1] ""  
## [1] "Bayesian Information Criterion (BIC) Matrix"  
## [1] "BIC should be minimized and a difference of 10 BIC indicates strong evidence that the model with lower BIC is superior"  
## Normal Skew-normal  
## 1 Component(s): -20.46063 -3242.631  
## 2 Component(s): -7174.86787 -7293.374  
## 3 Component(s): -7340.69321 -7437.852  
## 4 Component(s): -7435.41094 -7427.607  
## 5 Component(s): -7426.65608 -7403.236  
## [1] "Below is a table of the BIC's of the most common distribution and number of component combinations to base a cutpoint on"  
## Description BIC   
## Best Overall Skew-normal with 3 components -7437.852  
## Best Skew-normal Skew-normal with 3 components -7437.852  
## Best Normal Normal with 4 components -7435.411  
## Two Skew-normal Skew-normal with 2 components -7293.374  
## Two Normal Normal with 2 components -7174.868

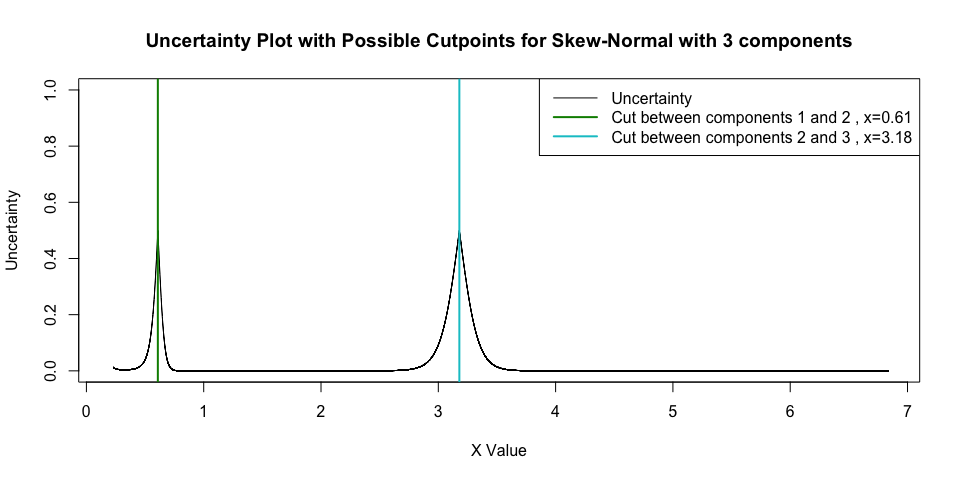
bicgraph(fitobj = fitloopsobject2)



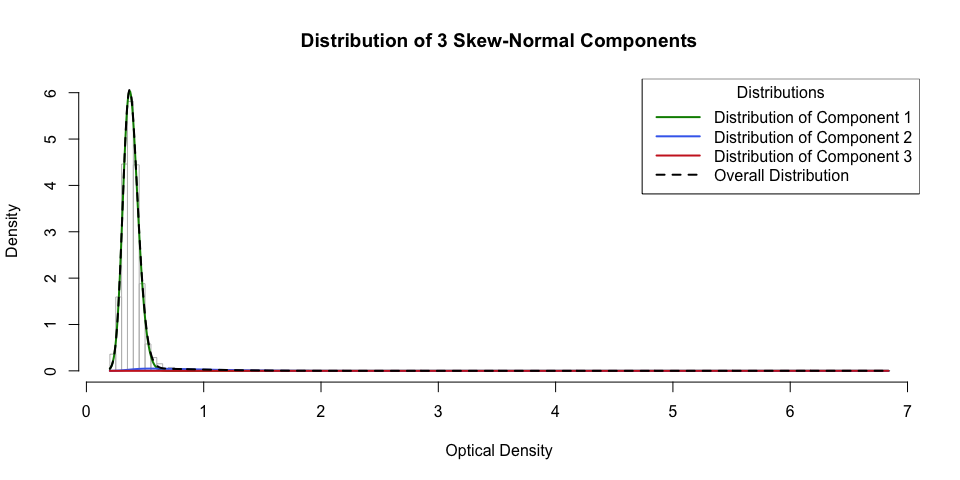
modelpickobject2<-modelpick(fitobj = fitloopsobject2)

## Number Negative Number Positive  
## Cut between components 1 and 2 3187 90  
## Cut between components 2 and 3 3273 4  
## Percent Negative Percent Positive  
## Cut between components 1 and 2 97.25% 2.75%  
## Cut between components 2 and 3 99.88% 0.12%

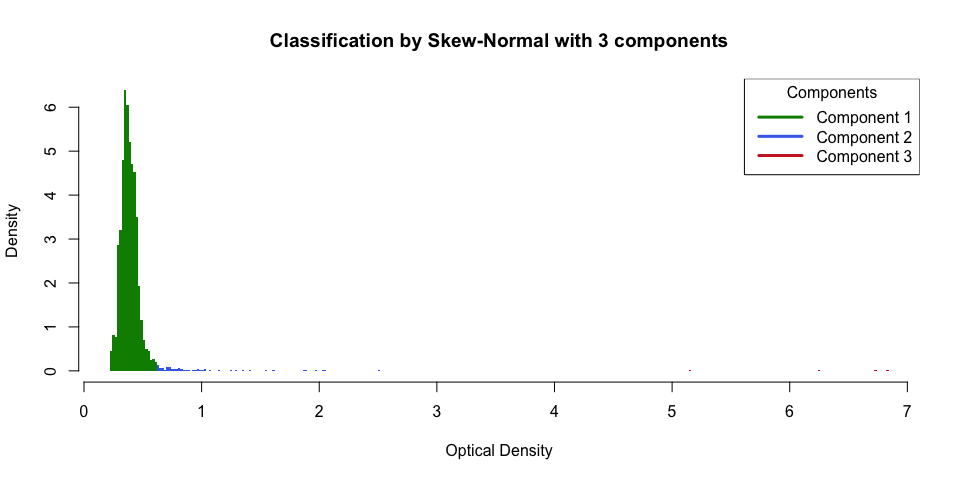
rawuncertgraph(modelpickobj = modelpickobject2)



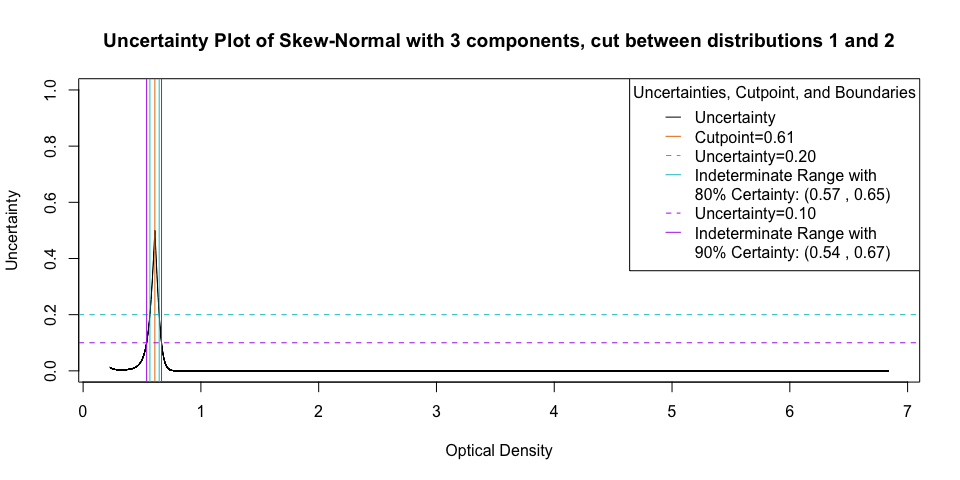
rawdistgraph(modelpickobj = modelpickobject2)



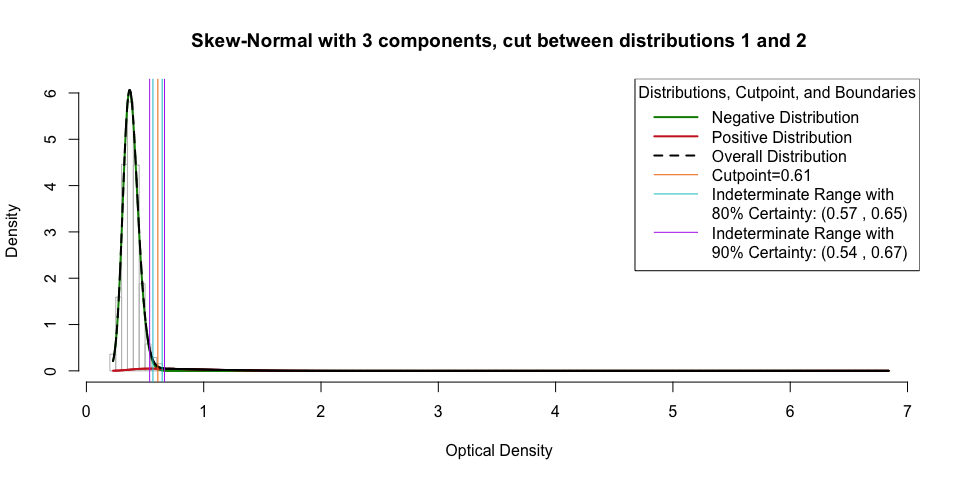
rawhistcuts(modelpickobj = modelpickobject2)



cutoffobject2<-cutoff(modelpickobj = modelpickobject2, cutcomp = 1)  
  
cutuncertgraph(cutobj = cutoffobject2)



cutdistgraph(cutobj = cutoffobject2)



summaryobject2<-summaryout(cutobj = cutoffobject2)