# Code merge - Distribution plots

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## Summary

### Objective

Recode **aux.plot.hist** and **aux.plot.dist** to simplify their structure.

### Current issue

Sorting the covariates in the facet plot

### Requirements

- main function **npde.plot.dist()**
  - input: npdeObject, which (variable to plot), dist.type (plot type, one of hist, qqplot, ecdf), "..."
  - output: one plot
- auxiliary functions **aux.npdeplot.hist()** and **aux.npdeplot.dist()**
  - input: both functions should take as input
    - a dataframe obsmat: matrix with the data to plot, with columns
      - x; variable to plot
      - category: covariate category (if "all", overall plot)
    - graphical options: plot.opt
    - distrib: reference distribution plot (one of norm, unif)
    - sim.ypl: if given, a vector of simulated data for the variable to plot
    - for aux.npdeplot.hist(), nclass (nb of classes)
  - output
    - distribution plots: histogram (aux.plot.hist), ecdf or qqplot (aux.plot.dist)
    - note: QQ-plot for uniform variable is similar to ecdf (theoretical quantiles correspond to the cumulative density function)

### Defining folders, loading libraries

### Loading functions

### Run npde

### Prepare objects

## Debug auxiliary plots

### Histogram

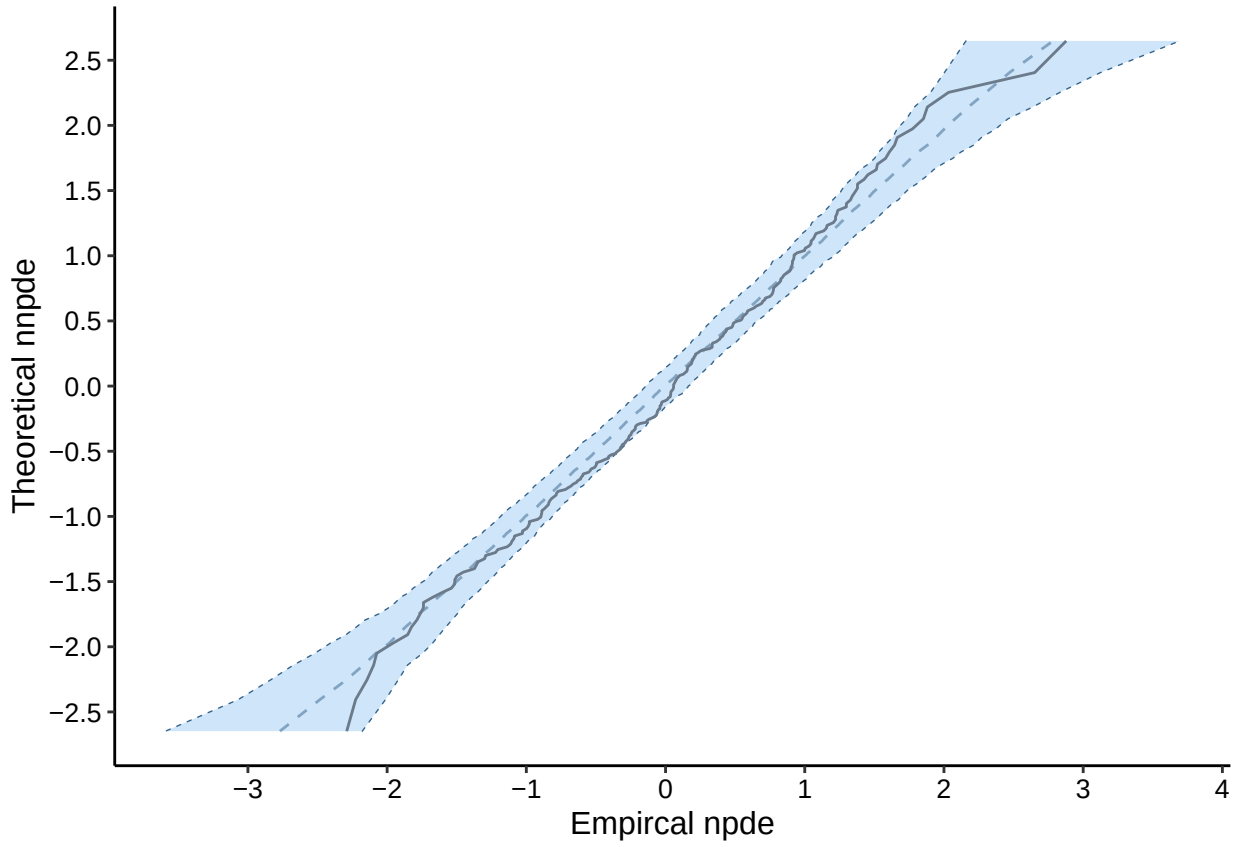
- 3 plots: no covariate, sex in 2 categories, weight in 3 categories
- problem with sorting the categories

**Distribution plot: ecdf**

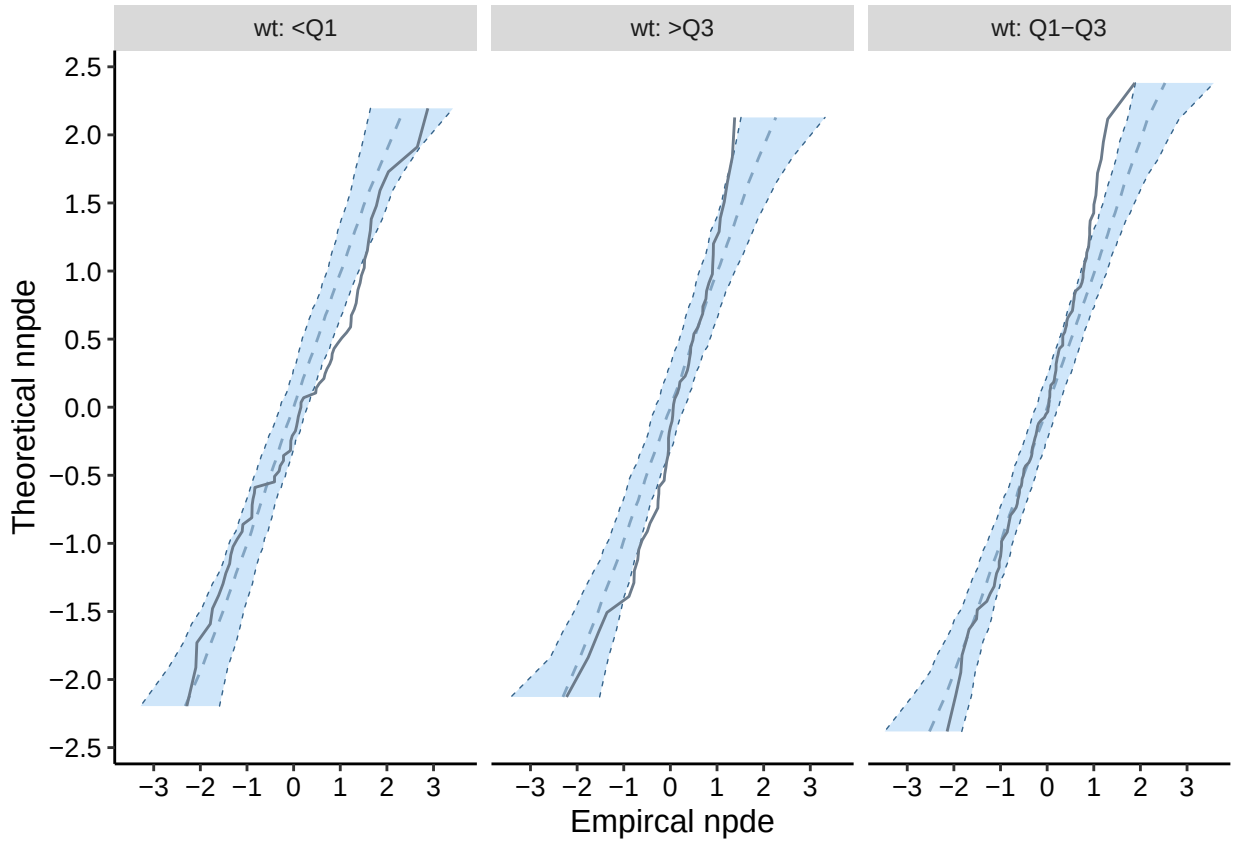
**Distribution plot: qqplot**

### Debug main distribution plot function

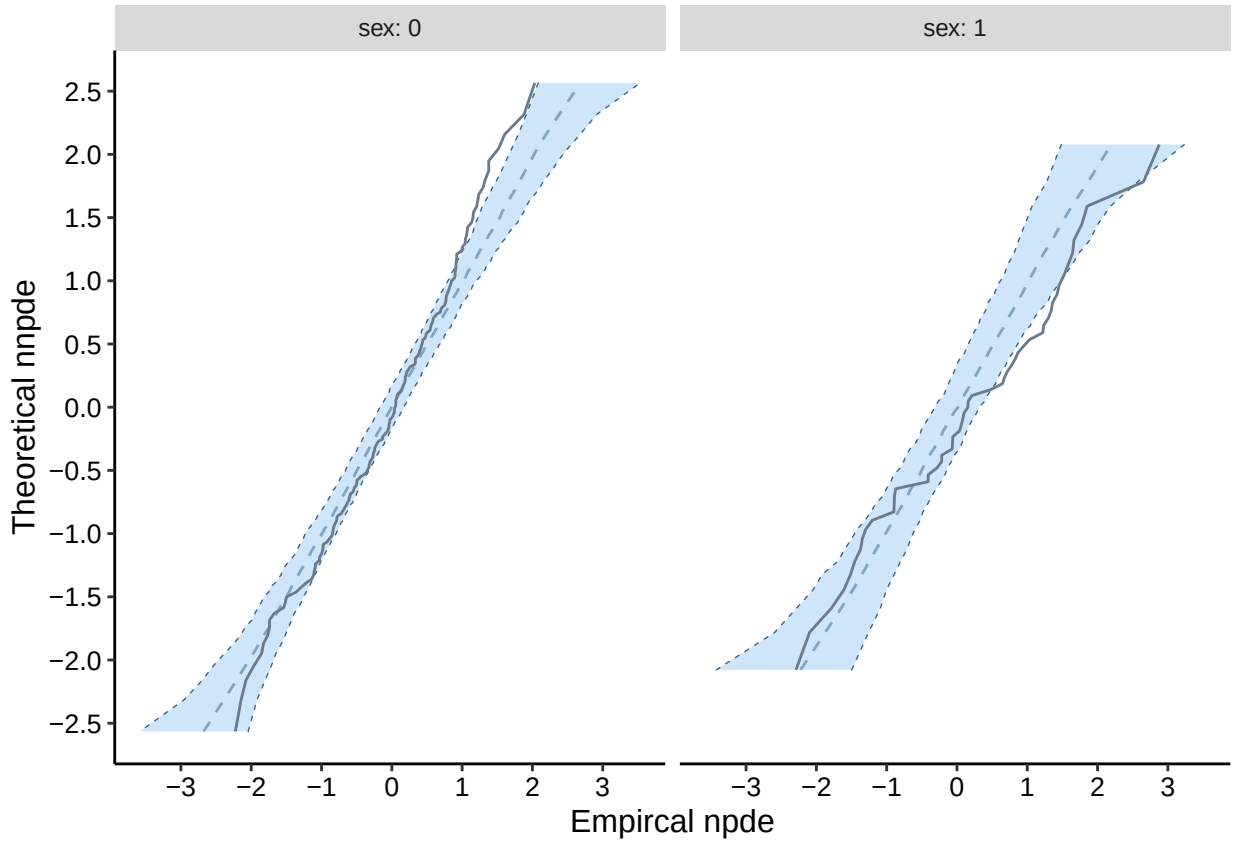
```
source(file.path(workDir,"npde","R","plotNpde-distributionPlot.R")) # renamed from plotNpde-unitFunctio
npde.plot.dist(wbase,  which="npde", dist.type="qqplot")
```



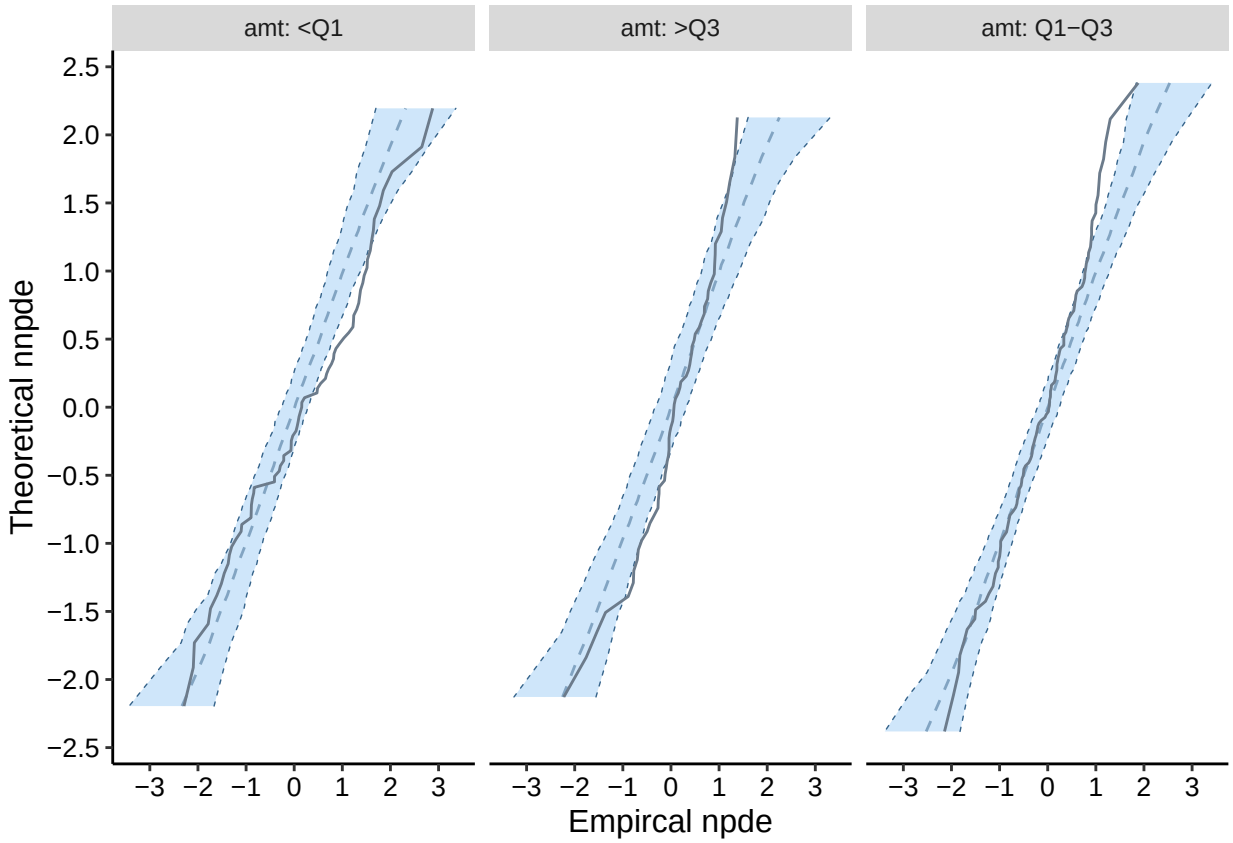

```
npde.plot.dist(wbase,  which="npde", dist.type="qqplot", covsplit=TRUE, which.cov=c("wt"))
```

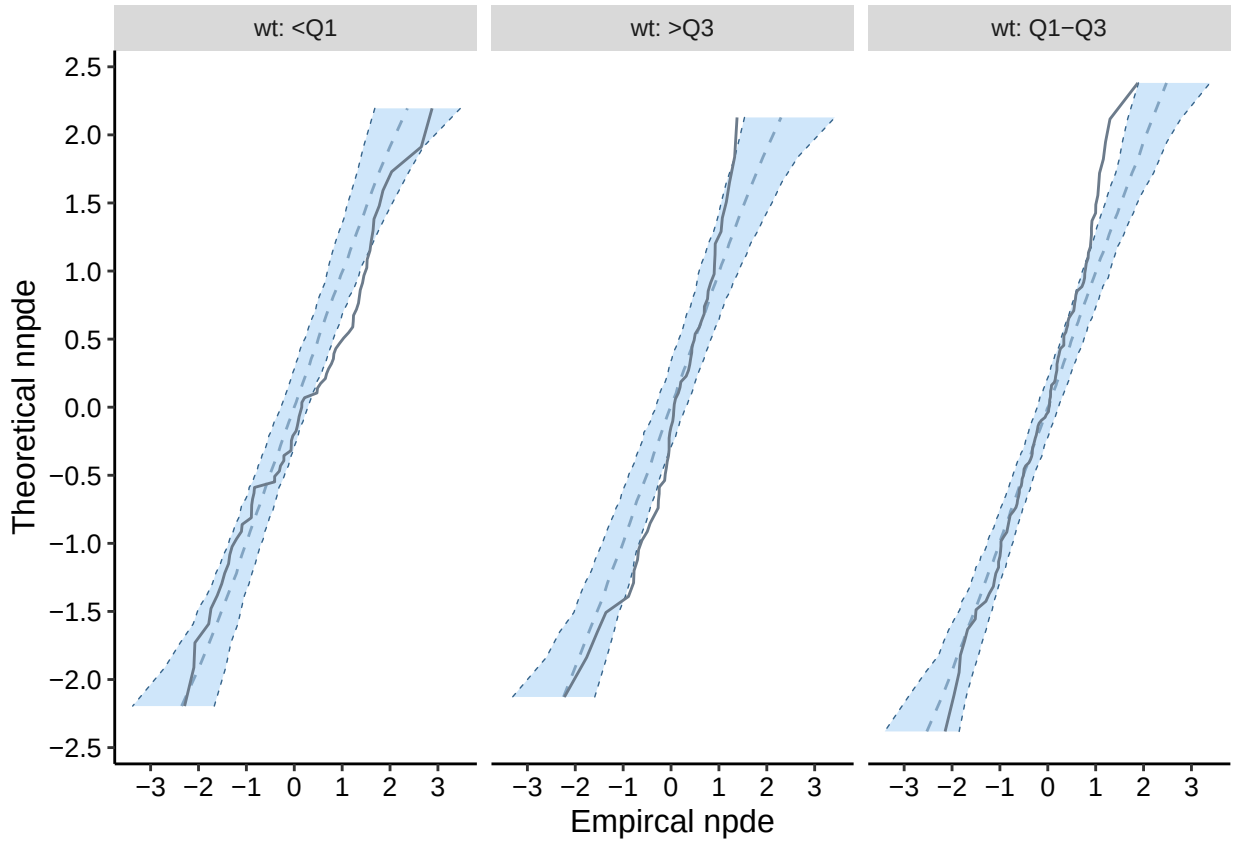


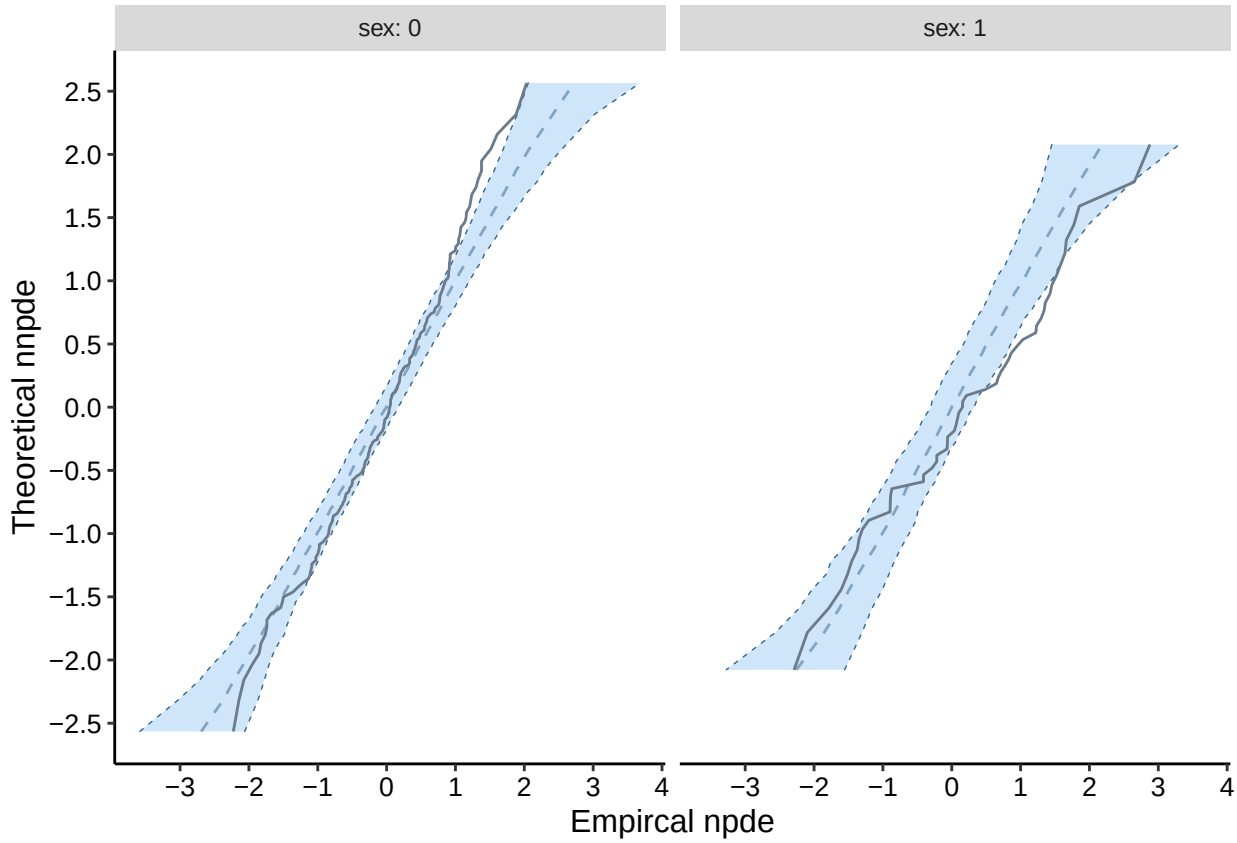

```
npde.plot.dist(wbase,  which="npde", dist.type="qqplot", covsplit=TRUE, which.cov=c("sex"))
```



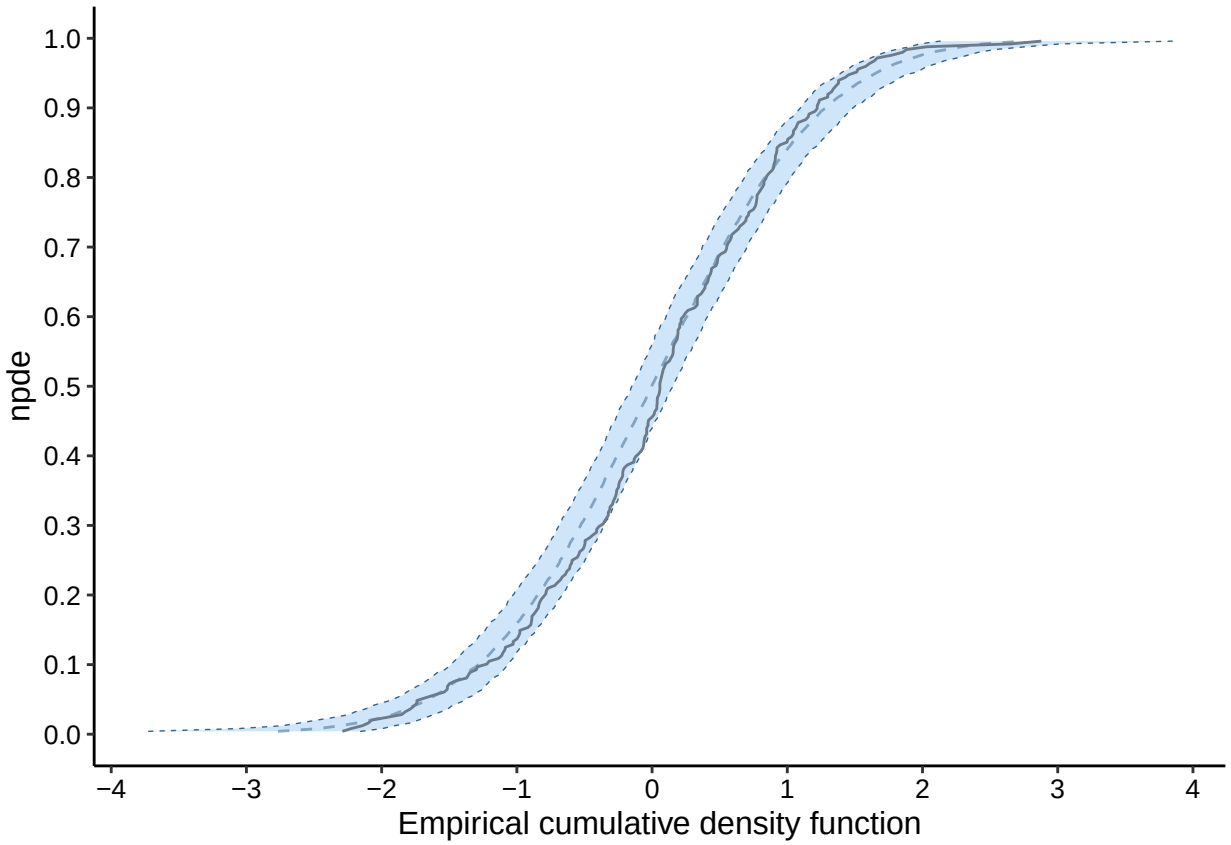

```
npde.plot.dist(wbase,  which="npde", dist.type="qqplot", covsplit=TRUE, which.cov=c("all"))
```


amt: <Q1
amt: >Q3
amt: Q1−Q3
Theoretical nnpde
Empircal npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−3
−2
−1
0
1
2
3

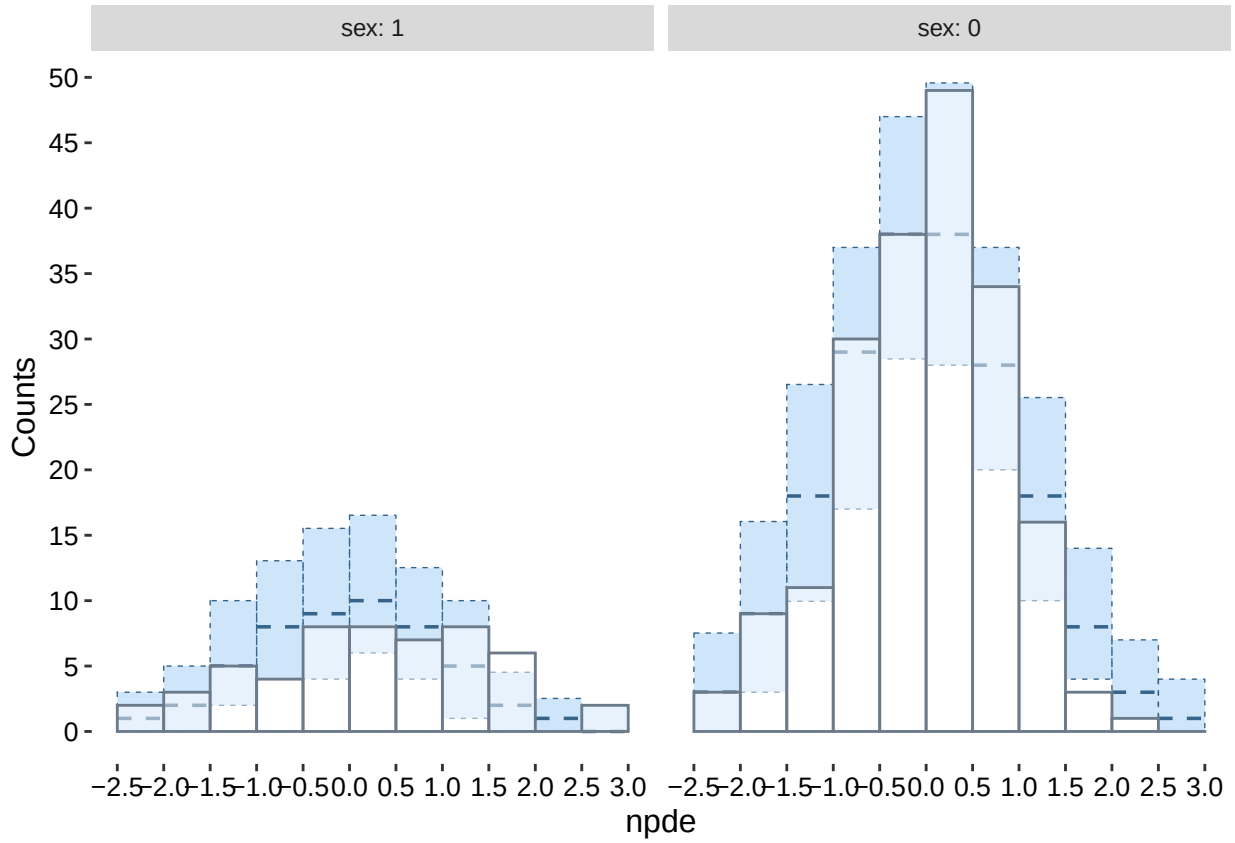

wt: <Q1
wt: >Q3
wt: Q1−Q3
Theoretical nnpde
Empircal npde
2.5
2.0
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−3
−2
−1
0
1
2
3




```
npde.plot.dist(wbase,  which="npde", dist.type="ecdf", covsplit=TRUE, which.cov=c("age"))
```




```
npde.plot.dist(wbase,  which="npde", dist.type="hist", covsplit=TRUE, which.cov=c("sex"))
```




```
# debut
if(FALSE) {
  npdeObj<-wbase
  plot.opt<-npdeObject@prefs
  which<-"npde"
  plot.opt$covsplit<-TRUE
  plot.opt$which.cov<-c("wt")
  dist.type="ecdf"
}
```