

Regularization and Variable Selection for Parametric Models (5)

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```
> library(mboost)
> library(GAMBoost)

> library(catdata)
> data(heart, package="catdata")
> X<-heart[,-1]
> y<-heart[,1]
> X.std<-scale(X)
> p<-ncol(X)
> n<-length(y)
> family <- binomial()
> n.fold<-10
> ylab.text<-""
> xlab.text<-""
> Width = 6
> Height = 6
> oma.vec<-c(1,1,1,3)
> size.axis=1.4
> size.lab=1.4
> size.main=1.4
> size.right=1.2
> size.width=2.0
> colour=1

Tutz/Binder Boost

> Path<-GLMBoost(x=X.std,y,penalty=length(y),standardize=FALSE,family=binomial(),
+ stepno=500)
> Path<-Path$beta.linear*sqrt(n)

> par(oma=oma.vec,cex.axis=size.axis,cex.lab=size.axis,cex.main=size.main)
> matplot(rowSums(abs(Path))/max(rowSums(abs(Path))),Path,type="l",ylab=ylab.text,
+ xlab=xlab.text,main="GLMBoost",lwd=size.width, col=colour)
> axis(4,at = Path[500,], labels = colnames(X), adj = 0,las =1,cex.axis=size.right)
>
```



mboost

```

> y.boost<-as.factor(y*2-1)
> X.boost<-X.std/2
> mstop=500
> aux<-glmboost(y.boost~X.boost,family=Binomial(),control=boost_control(mstop=mstop,
+ nu=0.1))
> Path<-matrix(0,mstop,p)
> for(i in 1:500)
+ {
+ Path[i,]<-coef(aux[i],2:10)
+ }

> par(oma=oma.vec,cex.axis=size.axis,cex.lab=size.axis,cex.main=size.main)
> matplot(c(0,rowSums(abs(Path))/max(rowSums(abs(Path))))),rbind(0,Path*sqrt(n)),
+ type="l",ylab=ylab.text,xlab=xlab.text,main="glmboost (mboost)",lwd=size.width,
+ col=colour)
> axis(4, at = Path[500,]*sqrt(n), labels = colnames(X), adj = 0, las = 1,
+ cex.axis=size.right)

```

