MONTE CARLOS PARSIMONIOUSLY TIME VARYING PARAMETER MODELS.
NOISE TO SIGNAL.

LAFC JTK

In this document we look at constant parameter path equal to 1, for varying T. We also vary the noise to signal ratio, that is the variance of ϵ_t betweem 0.1,1,10, while the variance of X is constant equal to 1.

```r
# Check if melted data exists, otherwise melting.
if(!file.exists('../mcsaves/mxp_n2s')){
        load('../mcsaves/mc_n2s')
        mxp <- melt(mcxp)
        save(mxp,file = '../mcsaves/mxp_n2s')
} else {load('../mcsaves/mxp_n2s')}


colnames(mxp) <- c('Time','Variable','value','Estimator','iter','Experiment')
mxp$iter <- factor(mxp$iter)
mxp$Experiment <- factor(mxp$Experiment)


xpnames <- unique(mxp$Experiment)
#levels(mxp£Experiment) <- xpnames
```

```r
npath    <- 5
mxp.plt <- subset(mxp,(iter%in%c(1:npath)) & (Experiment%in%xpnames[1:3]) & (Estimator!='
# plotting
plt<-(mcplt(mxp.plt,ncol=3))
print(plt)
```
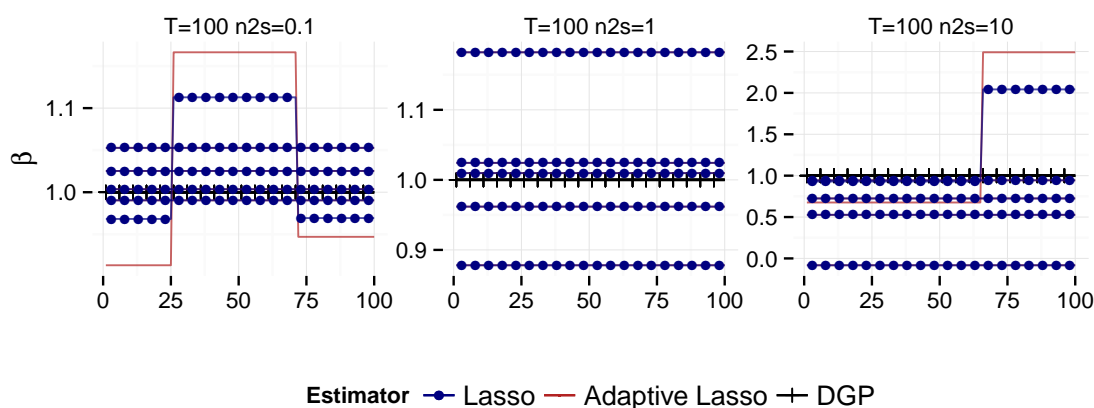


```r
ggsave(plt,file='figure/n2s.pdf',width=10,height=4)
```

```r
statn <- c('Nbr. breaks','False positive','True positive','False negative','Esti. error l
en <- c('Lasso','aLasso','Post')
```

		T=100 n2s=0.1	T=100 n2s=1	T=100 n2s=10	T=1000 n2s=0.1	T=1000 n2s=1	T=1000 n2s=10	
Nbr. breaks	DGP	1	1	1	1	1	1	
	Lasso	3.608	3.316	3.416	0.326	3.348	3.893	8.38
	aLasso	1.447	1.303	1.44	0.271	1.328	1.004	3.9
False positive	Lasso	2.84	2.539	2.69	0.306	2.563	2.902	6.0
	aLasso	0.826	0.674	0.819	0.255	0.689	0.13	2.
True positive	Lasso	0.768	0.778	0.726	0.02	0.785	0.992	2.3
	aLasso	0.622	0.629	0.622	0.016	0.639	0.874	1.9
False negative	Lasso	0.232	0.222	0.274	0.98	0.215	0.008	0.6
	aLasso	0.378	0.371	0.378	0.984	0.361	0.126	1.0
Esti. error l1	Lasso	0.248	0.257	0.248	0.221	0.256	0.285	0.3
	aLasso	0.211	0.212	0.212	0.25	0.213	0.248	0.
	Post	0.262	0.251	0.253	0.235	0.252	0.276	0.3
Pred. error l2	Lasso	0.087	0.079	0.087	0.056	0.079	0.089	0.1
	aLasso	0.062	0.058	0.063	0.076	0.058	0.066	0.0
	Post	0.079	0.072	0.079	0.063	0.073	0.074	0.1
rmse	Lasso	0.31	0.309	0.31	0.313	0.308	0.313	0.3
	aLasso	0.306	0.307	0.306	0.299	0.307	0.316	0.2
	Post	0.303	0.304	0.302	0.312	0.303	0.304	0.
Lambda	Lasso	0.017	0.024	0.017	0.027	0.023	0.028	0.0
	aLasso	0.024	0.018	0.005	0	0.011	71.48	0.0

TABLE 1. Constant parameter, varying sample size: 10000 iterations.

```r
mc <- length(mcxp[[1]])
ptvtbl <- ptv.xptab(mcxp=mcxp,statn=statn,en=en,mc=mc)

#Nbr breaks in the DGP path
nbrk <- ptvtbl[,1,'DGP']

# Formating the table
mtbl <- melt(ptvtbl)
mtbl <- subset(mtbl,Estimator!='DGP')
tbl <-  acast(mtbl,Stat + Estimator ~ Experiment)
tbl[which(is.na(tbl),arr.ind = TRUE)] <- 0
```