MONTE CARLOS PARSIMONIOUSLY TIME VARYING PARAMETER MODELS. DETERMINISTIC DGPS.

LAFC JTK

```
load('../mcsaves/mc_brk')

# preparing the data
mxp <- melt(mcxp)
colnames(mxp) <- c('Time','Variable','value','Estimator','iter','Experiment')
mxp$iter <- factor(mxp$iter)

#clean xp names
mxp$Experiment <- gsub('a=1 b=','Break Location XP',mxp$Experiment)
mxp$Experiment <- gsub('a=2 b=','Break Size XP',mxp$Experiment)
mxp$Experiment <- gsub('a=3 b=','Break Number XP',mxp$Experiment)

# xperience labels
xpnames <- unique(mxp$Experiment)
```

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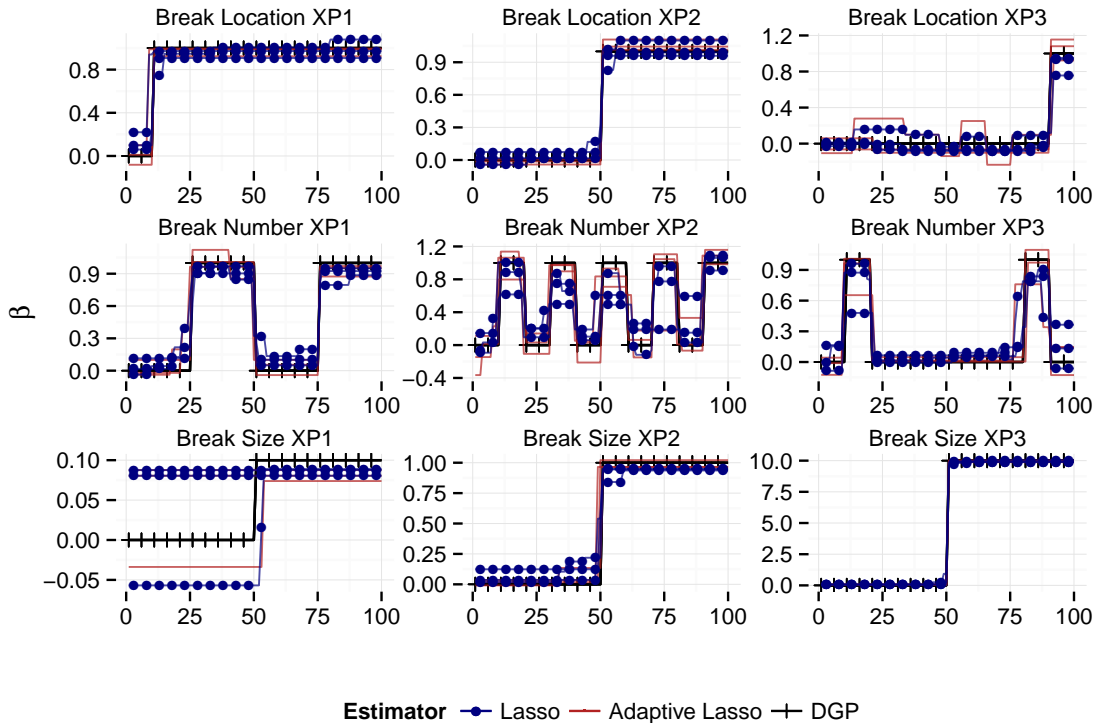


```
ggsave(plt,file='figure/brk.pdf',width=16,height=12,units='cm')
```

```
statn <- c('Nbr. breaks','False positive','True positive','False negative','Esti. error l1','Pred. error l2','rmse','Lamb
en <- c('Lasso','aLasso','cLasso','Post')
```

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

		Break Location XP1	Break Location XP2	Break Location XP3	Break Size XP1	Break Size XP2	Break Size XP3	Brea
Nbr. breaks	DGP	1	1	1	1	1	1	
	Lasso	3.608	3.316	3.416	0.326	3.348	3.893	
	aLasso	1.447	1.303	1.44	0.271	1.328	1.004	
False positive	Lasso	3.608	3.316	3.416	0.326	3.348	3.893	
	aLasso	2.84	2.539	2.69	0.306	2.563	2.902	
True positive	Lasso	0	0	0	0	0	0	
	aLasso	2.84	2.539	2.69	0.306	2.563	2.902	
False negative	Lasso	0.622	0.629	0.622	0.016	0.639	0.874	
	aLasso	0	0	0	0	0	0	
Esti. error l1	Lasso	0.232	0.222	0.274	0.98	0.215	0.008	
	aLasso	0.378	0.371	0.378	0.984	0.361	0.126	
	Post	1	1	1	1	1	1	
Pred. error l2	Lasso	0.232	0.222	0.274	0.98	0.215	0.008	
	aLasso	0.248	0.257	0.248	0.221	0.256	0.285	
	Post	0.211	0.212	0.212	0.25	0.213	0.248	
rmse	Lasso	0.949	0.707	0.316	0.224	0.707	2.236	
	aLasso	0.262	0.251	0.253	0.235	0.252	0.276	
	Post	0.087	0.079	0.087	0.056	0.079	0.089	
Lambda	Lasso	0.062	0.058	0.063	0.076	0.058	0.066	
	aLasso	0.946	0.704	0.308	0.07	0.704	7.018	

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