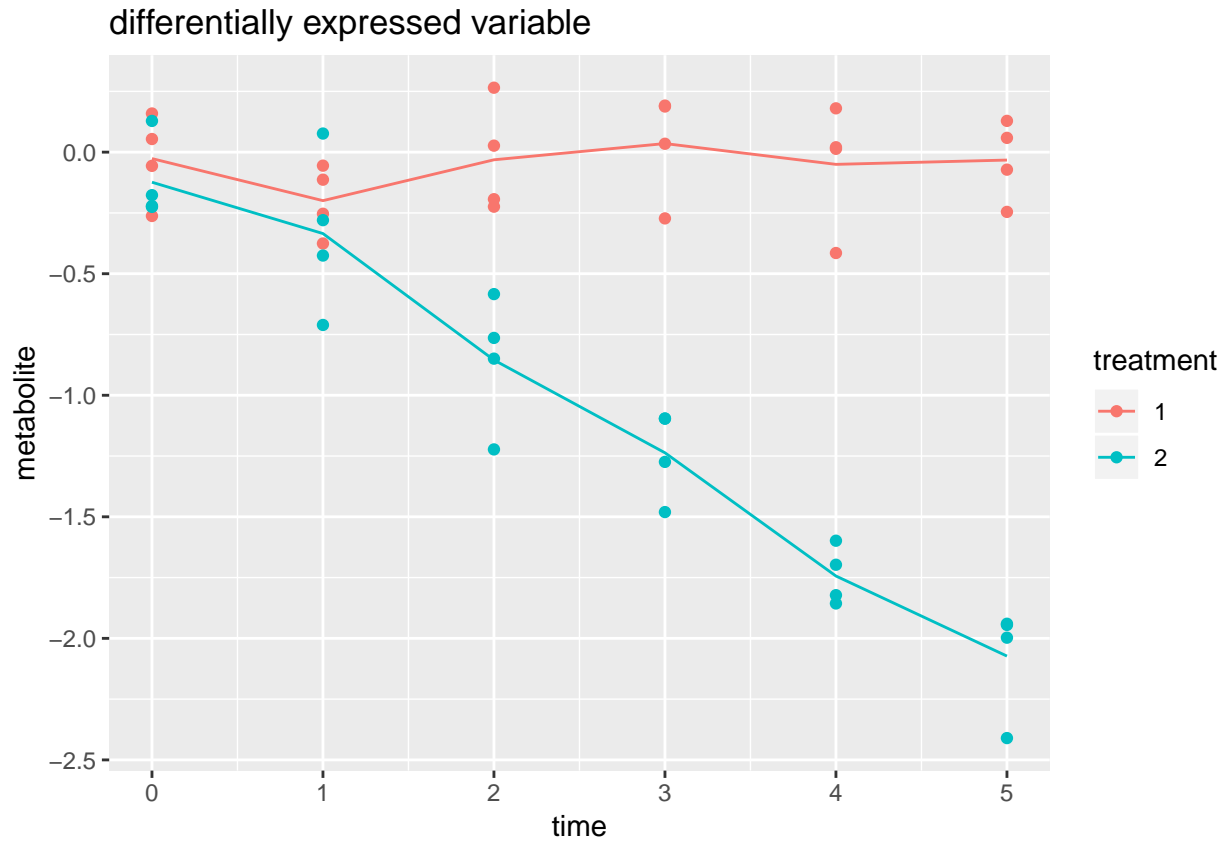


improved leverage

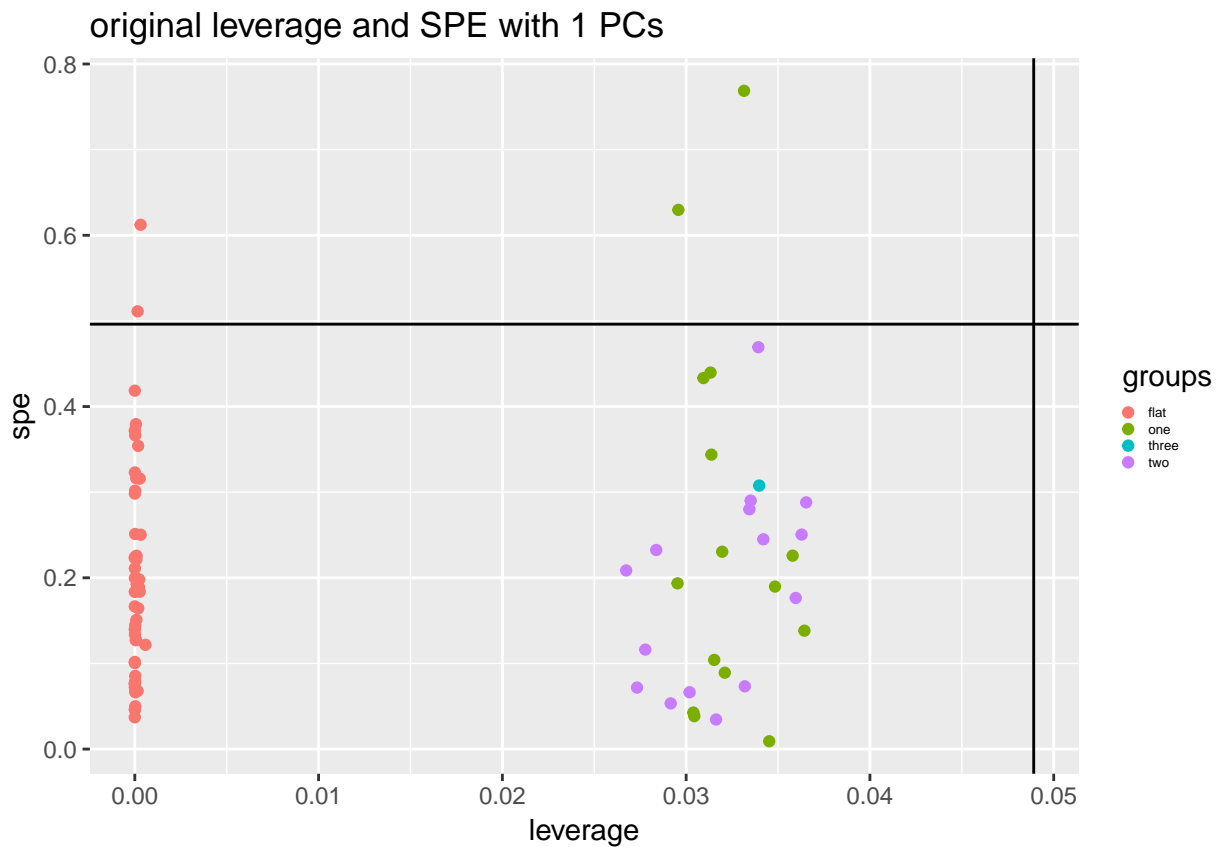
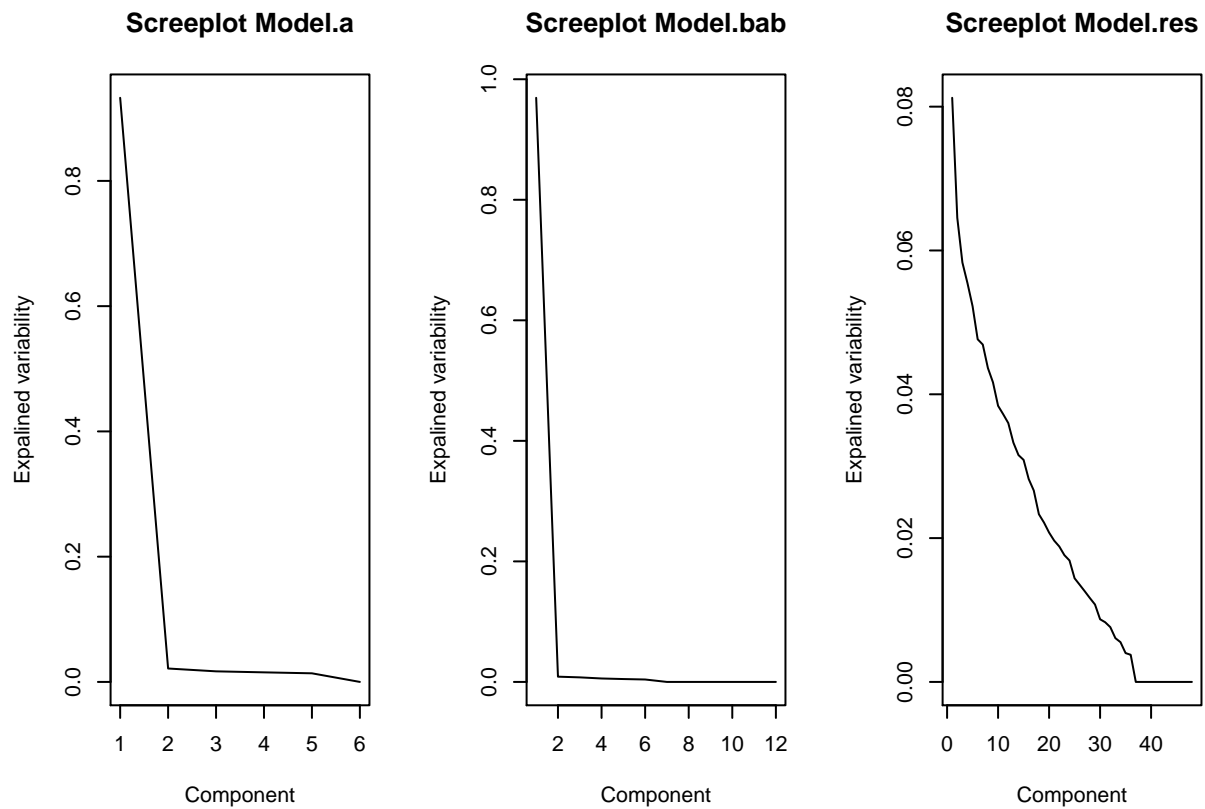
zhu

23/12/2018

there are 2 treatments, 6 time points and 4 replicates. replicates were drawn as independent observations from normal distribution $N(0,0.2)$. The simulation dataset consists of 48 rows(samples) and 81 columns(31 differential expressed variable and 50 flat variables).



example of differentially expressed variable is shown above.

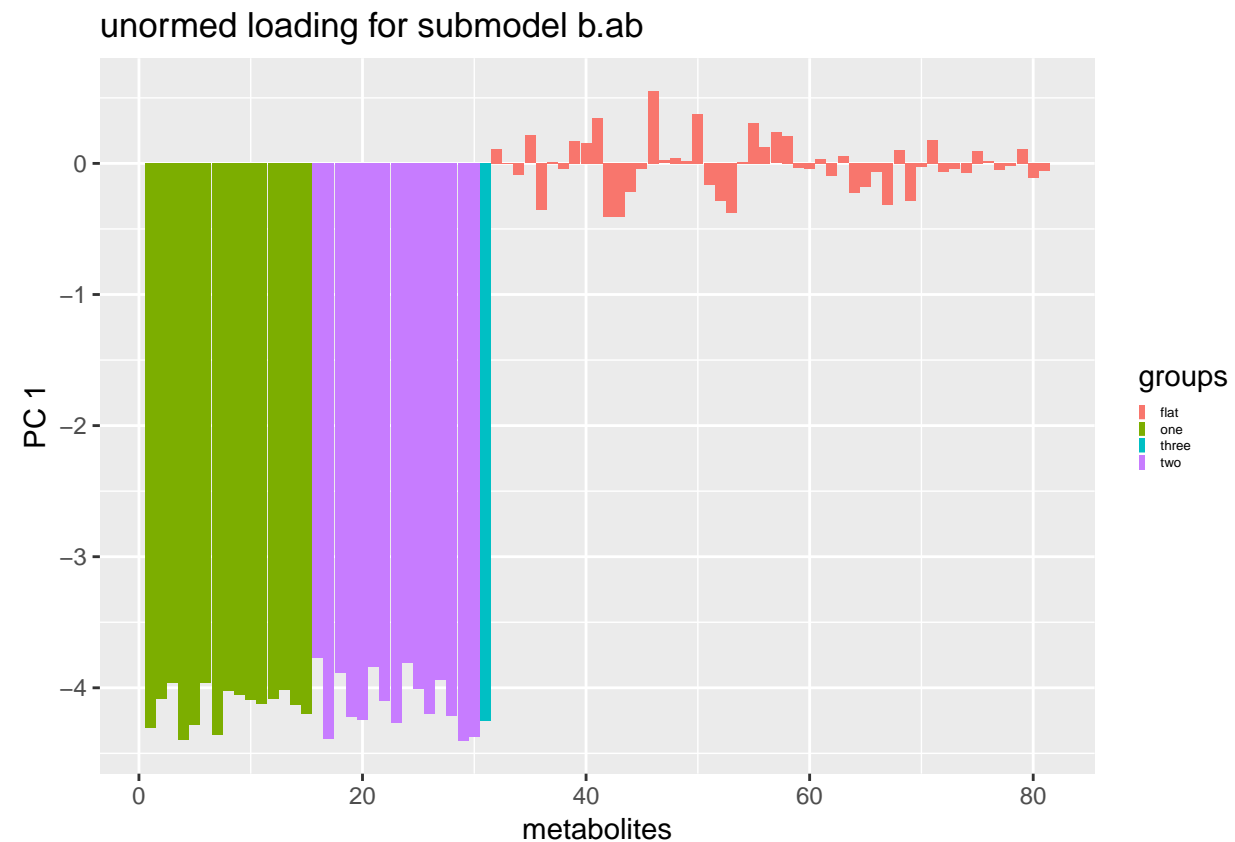


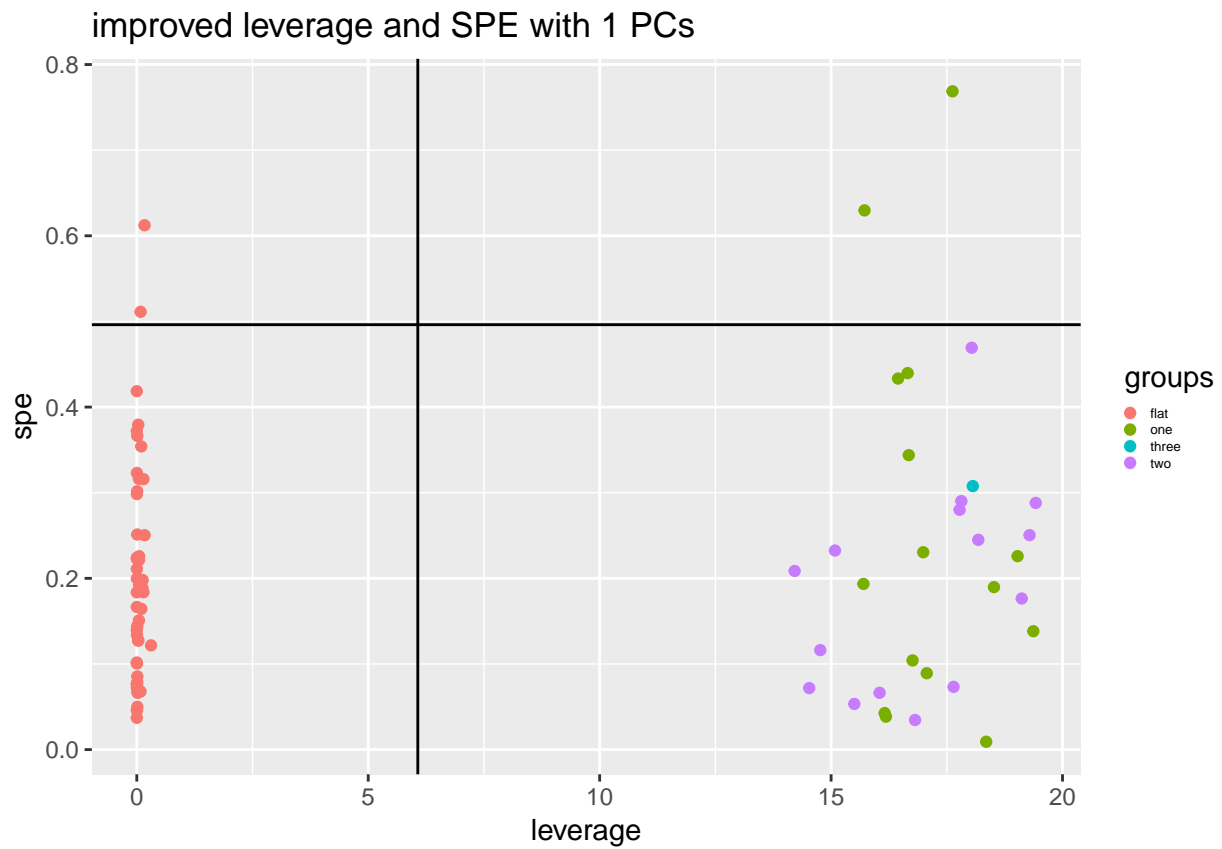
```
## character(0)
```

As expected, with 1 PC selected for submodel treatment and submodel interaction, leverage cutoff line set excluded all of the variabes to be significant.

As discussed previously, this is due to the loadings were normalized to unit vector during calculation. Alternatively, we could normalize score to unit vector. Modification was done in the asca-gene algoritrhm to achieve this. The formulus as well as the code is shown below:

```
## [1] "performing PCA for leverage"
```





the new loading and leverage and spe plot are shown above. simulation data are correctly indentified as designed.