

## Subsets study (I) (statistics study)

Two types of subsets are created,

- 1) parted by the time
- 2) parted by the SDD#

in order to check the statistical dependencies of the shift and the width of KHeX.

Data : 1st and 2nd cycles of E570

SDDs : all channels (1st : 2,4 and 5, 2nd : 1,2,3,4,5,7 and 8)

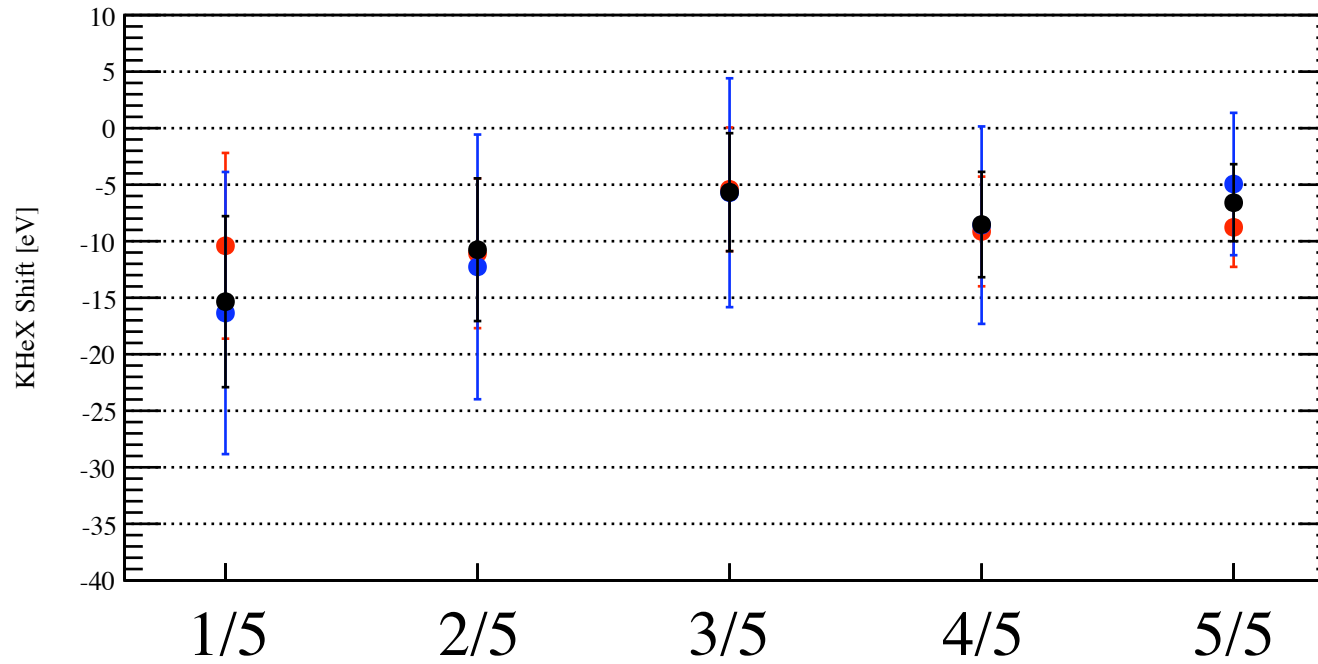
Histo : w/ vertex cuts, w/o vertex cuts and the difference of them

\*vertex cuts are defined in the report on 19/May/2006 by Okada-san

# subsets (parted by time)

## 1st cycle

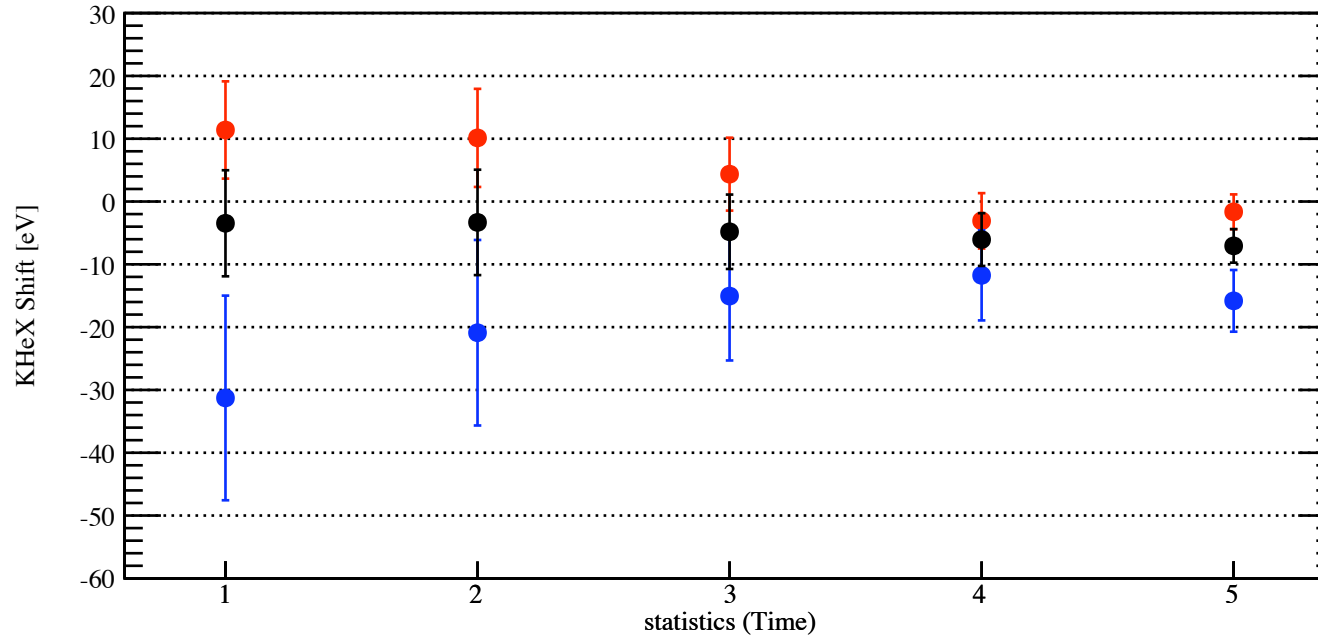
KHeX Shift



red : w/ vertex cuts  
black : w/o vertex cuts  
blue : difference of them

## 2nd cycle

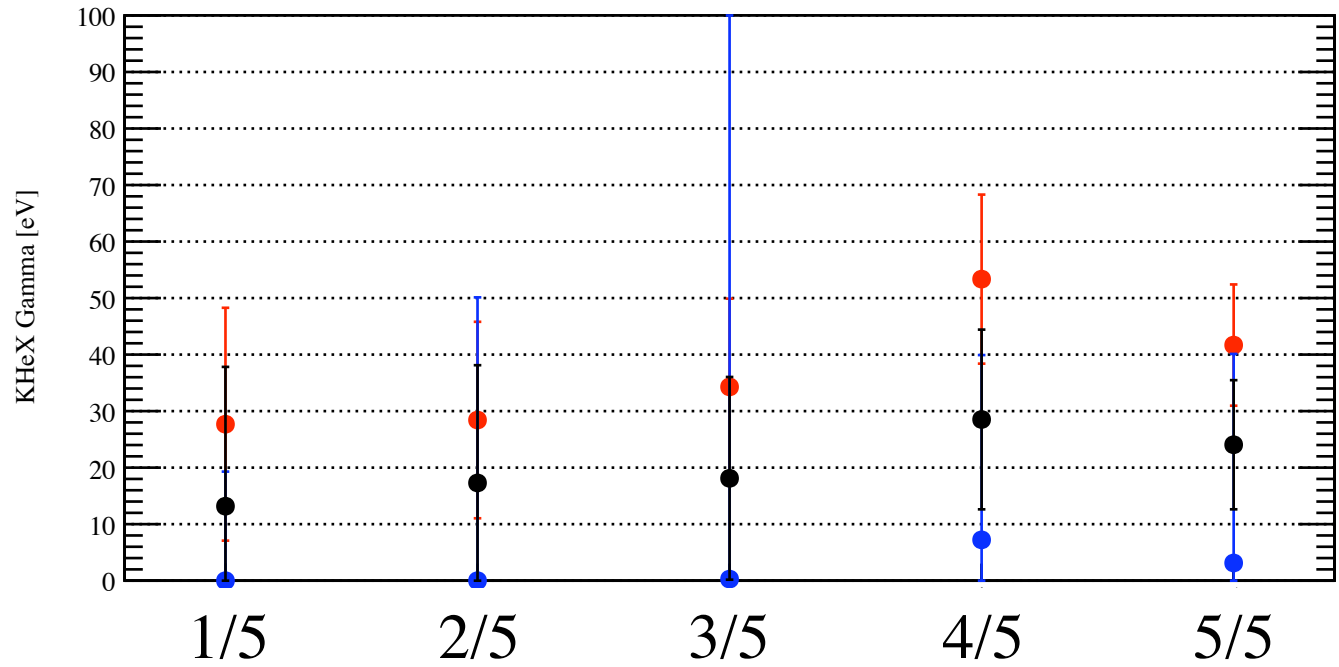
KHeX Shift



# subsets (parted by time)

1st cycle

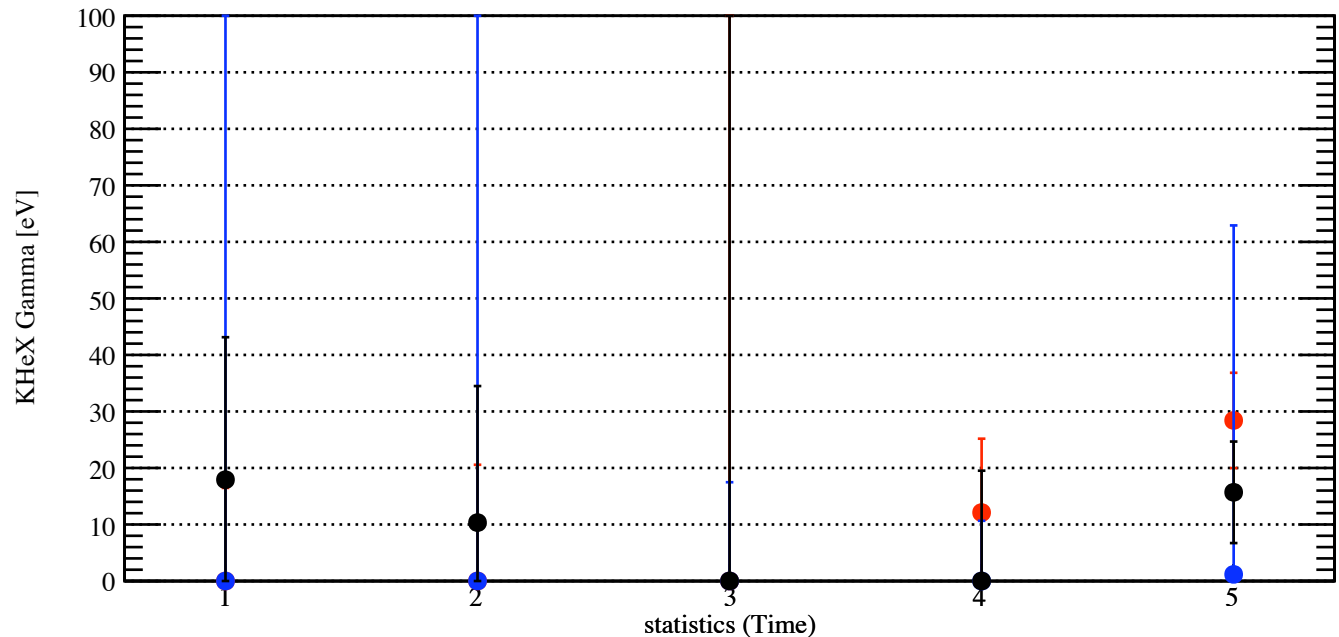
KHeX Gamma



red : w/ vertex cuts  
 black : w/o vertex cuts  
 blue : difference of them

2nd cycle

KHeX Gamma



# subsets (parted by SDD)

KHeX Shift

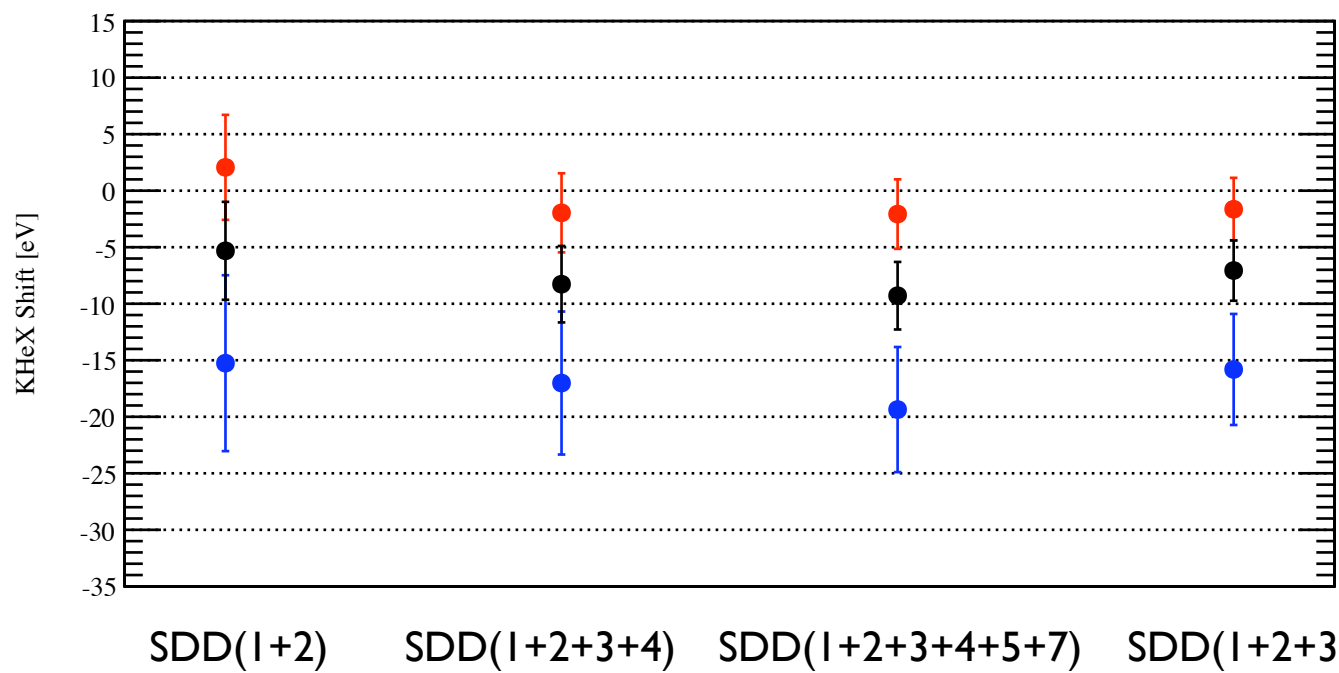
## 1st cycle



red : w/ vertex cuts  
black : w/o vertex cuts  
blue : difference of them

KHeX Shift

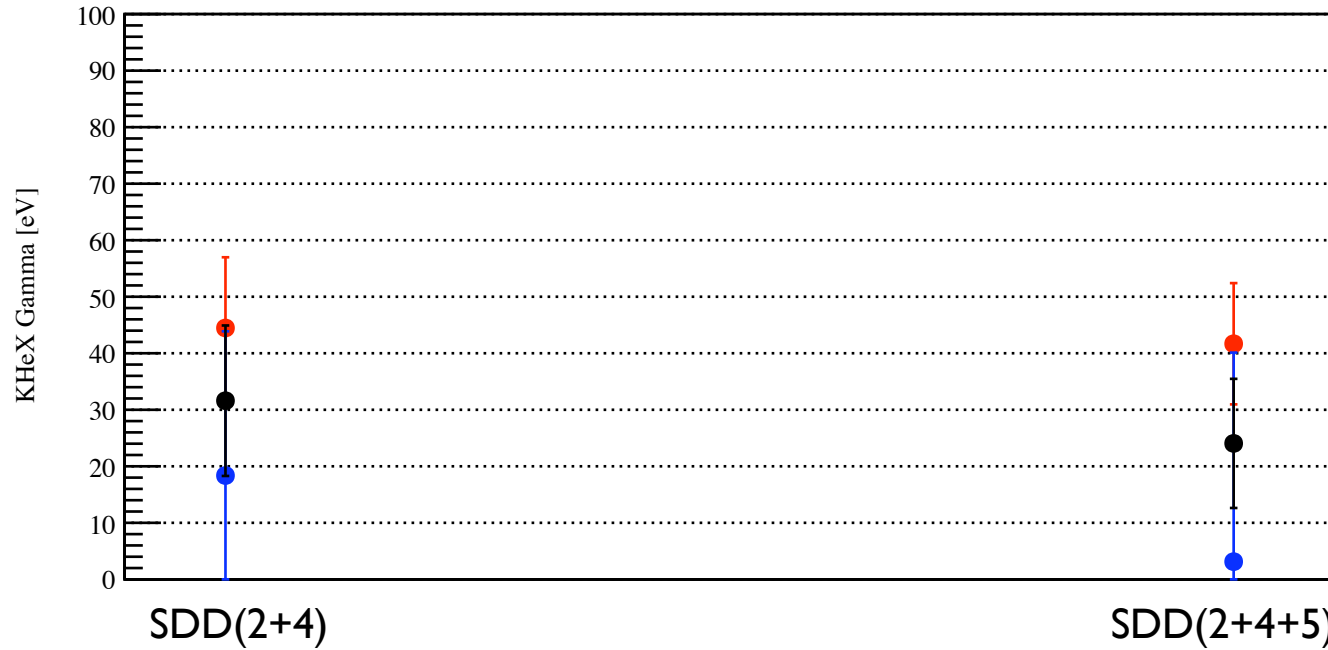
## 2nd cycle



# subsets (parted by SDD)

1st cycle

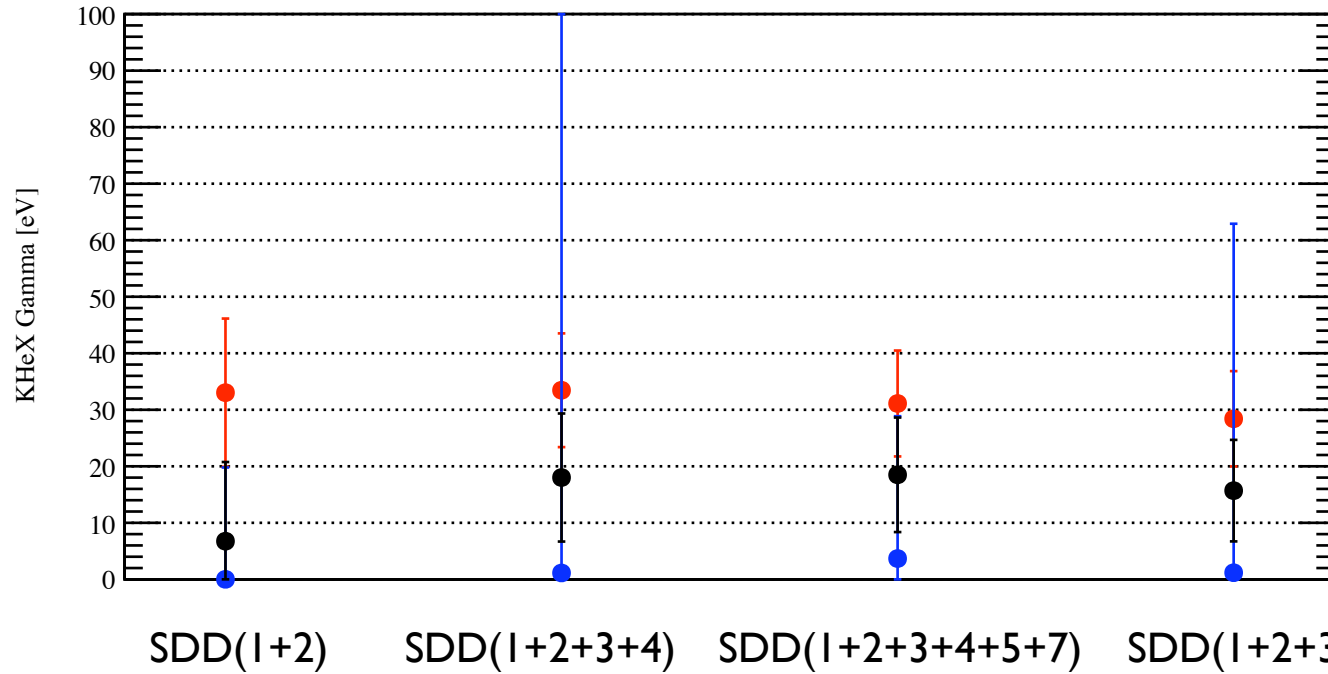
KHeX Gamma



red : w/ vertex cuts  
black : w/o vertex cuts  
blue : difference of them

2nd cycle

KHeX Gamma



# Summary

## 1) subsets parted by the time

For the 1st cycle, all subsets are consistent within their errors, and there is no difference between w/ and w/o vertex cuts. Slightly the width of w/ is larger than w/o, this may be caused by the large background of w/o.

For the 2nd cycle, it is difficult to say any determinate things only from that figures. It seems like the vertex cuts separate the events corresponding to “zero like shift” from all of them. In other words, they don't choose the events randomly. If they are random, the fitted results can change the positions from the average.

## 2) subsets parted by the SDD#

There is no statistical dependency for 1st and 2nd cycles.